Report for the year 1971

Commissioner of Public Health

Western Australia

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REPORT of the
Commissioner of Public Health
for the year 1971

Presented to both Houses of Parliament

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The Honourable Ronald Davies, M.L.A.,
MINISTER FOR HEALTH

☆

Sir,

I have the honour to submit the Report of the Department of Public Health for the Year 1971

WILLIAM SHARP DAVIDSON, M.B., Ch.B., D.P.H.
Commissioner of Public Health.

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ANNUAL REPORT, 1971

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Hon. Minister for Health

Sir, I have the honour to submit the report of the Department of Public Health for the year 1971.

VITAL STATISTICS

The Birth Rate increased from 21·80 per 1,000 population in 1970 to 23·57 in 1971.

The Infant Mortality decreased from 21·2 per 1,000 live births in 1970 to 19·1 in 1971 and the General Death Rate decreased from 7·61 to 7·59.

The Stillbirth rate decreased from 13·46 per 1,000 total births in 1970 to 12·15 in 1971.

Maternal Mortality decreased from 0·14 per 1,000 live births in 1970 to 0·12 in 1971.

All figures therefore show an improvement if one accepts in these days of over population an increased birth rate as an improvement. The 1971 birth rate is the highest since 1959.

LEGISLATION AMENDMENTS 1971

Nurses Act Regulations

Amended to reduce the age of admission as a student from 17½ years to 17 years. (*G.G.* 13/1/71).

Physiotherapists Act Rules

Amended to allow W.A.I.T. as a venue for study of the course of physiotherapy. (*G.G.* 29/1/71).

Infectious Diseases (Infection of Persons) Regulations

New regulations were published in the *Government Gazette* of 5th February, 1971.

Poisons Act Regulations

Amended (*G.G.* 12/2/71) to authorise supply of restricted medication to a person receiving treatment as a " drug addict ".

Again amended (*G.G.* 19/2/71) concerned with (a) the keeping of a Prescription Book (b) the warnings to be specified in respect of Poisons and Hazardous Substances.

Again (*G.G.* 26/5/71) to provide further safeguards *re* the containers in which poisons or hazardous substances are stored, sold, supplied or transported.

Again (*G.G.* 7/9/71) to specify security measures for the storage accommodation of 8th Schedule poisons.

Again (*G.G.* 24/11/71) to delete and substitute the Poisons Schedules.

Again amended to vary the annual licensing fees.

Lighting, Ventilation and Construction (Sewerages) Regs. 1971

New Regulations were published in the *Government Gazette* of 19th February, 1971.

Health Act (Swimming Pools) Regulations

1. Amended (a) by substituting the lighting conditions of pools ;
   and

   (b) to impose standards of competency on pool operators.
2. Again to amend the regulation concerned with residual free chlorine. (*G.G.* 30/11/71).

Health Act (Local Authorities Sewerage Undertakings) Model By-Laws

New Model By-laws prepared and published in *Government Gazette* of 10th March, 1971, available for adoption by interested local authorities.

Construction Camp Regulations

1. Amended in regard to the minimum ceiling height of a residential caravan.
2. Again amended principally to specify building standards which must prevail. (*G.G.* 16/12/71).

Model By-Laws Series " A "

Amendment published in *Government Gazette* of 18th August, 1971, concerning the provision of laundry facilities in flats, available for adoption by interested local authorities.

Health Act (Laundries and Bathrooms) Regulations

New regulations were published in the *Government Gazette* of 18th August, 1971.

Sewerage (Lighting, Ventilation and Construction) Regulations, 1971

Previous regulations on this subject revoked, now remade and published in the *Government Gazette* of 18th August, 1971.

Radioactive Substances Regulations

Amended to allow meeting fees comparable to those generally applying by Cabinet decision. (*G.G.* 21/9/71).

Pesticide Regulations

Amendments concerned with the activities of Commercial Pesticide Firms and pesticide operators, disposal of used pesticide containers, etc. (*G.G.* 28/10/71).

Clean Air Act

1. Proclamation declaring that Karratha and land within 50 miles of the townsite to be subject to the Act. (*G.G.* 29/10/71).
2. Order in Council to amend the Schedule to the Act to include " cement product manufacturing works ". (*G.G.* 26/11/71).
3. Clean Air Act (Control of Cement Dust) Regulations. New regulations made and published. (*G.G.* 30/11/71).
4. Clean Air Regulations amended to vary the amount of permissible sulphur dioxide emission, under normal operations.

Food and Drug Regulations

Amended to strengthen the provisions relating to—

- (a) Dessert and Custard Mixes or Powders;
- (b) Vegetables; and
- (c) Fruit Juices. (*G.G.* 30/11/71).

Meat Inspection and Branding Regulations

Amended from time to time to include various local authority districts as meat branding areas.

Also to vary Schedule " C " to now read as three scales A, B and C rather than four scales A, B, C and D. (*G.G.* 23/12/71).

Pharmacy Act Regulations

Amendments dealing with the registration of Pharmacies particularly those within a super mart or shopping complex. Alterations of registered premises are also dealt with.

Anatomy Act Amendment Act

Amended to clarify the position regarding post mortems other than post mortems required by the Coroner.

Clean Air Act Amendment Act

Amended to allow for the licensing of " Sandblasting Works " and the regulation of the procedures involved in " sandblasting operations ".

STATE HEALTH LABORATORIES

The Service provided by these Laboratories continues to grow despite extreme restrictions in accommodation and staff. Despite a continuing uneasiness regarding the future of the Laboratories which was referred to in my previous report, the staff has continued to produce work of a high quality and not only increased the output of the Laboratories by 20 per cent. but has also increased the quality by the development of new tests and techniques. The Laboratory has played its part in surveys at Cunderdin and Busselton and finds that there is an increasing demand for sophisticated tests, not only from teaching hospitals but also from medical practitioners in general practice.

All branches of laboratory work showed an increase but the proportional increases were most marked in Mycology, Haematology, Radioisotope work and Virology.

TUBERCULOSIS CONTROL

Mortality from tuberculosis at 1·6 per 100,000 population is the highest since 1966. The number of new notifications of disease is, however, the lowest recorded as a proportion of the population.

Mortality in migrants is more than twice that among the Australian born and non European migrants show a high proportion.

Compulsory Mass X-ray yielded only 0·16 positives per 1,000 films or 14·3 per cent. of new cases notified during the year.

Nine new cases due to atypical mycobacteria were notified. So far there has been no evidence of person to person transmission of this disease.

Dr. Edwards points out the increasing proportion of new notifications in elderly persons, particularly old men, and the need for this to be borne in mind by medical practitioners when dealing with elderly patients.

EPIDEMIOLOGY AND SPECIAL SERVICES

There has been a disappointing increase in Salmonella infection and in Infective Hepatitis. Two diseases which indicate a lack of adequate care in food hygiene and food preparation and the prevalence of such diseases indicates the need for a greater intensity of effort on the part of Local Authorities in the policing of sanitary measures and hygiene regulations in their areas.

During the year Rubella vaccination was commenced and given to girls in the first year of High School under the age of 14.

As the vaccine becomes available it is hoped to increase its use to younger female age groups.

A total of 2,874 persons were examined for trachoma, mainly in school aged and pre-school aged aborigine children. Active cases showed a slight increase from the previous year. It would appear that having brought the incidence of active trachoma in school children and pre-schoolers down to 30–35 per cent. we have about reached the optimum under present living conditions for the population mainly at risk.

Although the incidence in the under 5s is high (53·9 per cent.) the incidence in the over 5s is low and in the last 3 years has varied from 0 to 2·2 per cent. Our present programme endeavours to prevent the development of a chronic disease with resultant defects in vision.

A new development in 1971 was the setting up, in conjunction with Royal Perth Hospital, of a new Venereal Disease Clinic and increasing the staff in that section to—

1 full time venereologist
1 part-time venereologist
2 full time Public Health Nurses
1 Field Officer
1 clinic attendant.

Venereal Disease continues to increase although at a slower rate than in the last two years. There has however been a marked increase in syphilis.

The number of female notifications is increasing faster than the male, although the total is still a long way behind the latter. This, however, indicates some success in our follow up methods to find contacts and sources of infection.

The highest incidence of V.D. in males is in the 20–24 age group but in females it is in the 15–19 year group, which accounts for 150 out of a total of 379 women notified in all age groups.

LEPROSY CONTROL

The intensive drive to locate and examine all persons at risk that was previously undertaken by Dr. Holman has been continued by Dr. Spargo and a lengthy report by him has been included in a summarised form.

Extensive areas have been covered during the year and some 9,000 persons examined.

Difficulties in locating children going South each year for schooling are being overcome so that they obtain the annual medical inspection common to all school children in the North.

New treatments for leprosy are in use or under investigation and an intensive investigation into variations in sulphone metabolism is being carried out in conjunction with the W.A. University Department of Pharmacology prior to use of Hansolar (D.A.D.D.S.) in the field. The use of this long acting drug in the field will greatly facilitate outpatient treatment and lead to earlier discharge from the Leprosarium.

During the year 20 new cases were added to the Register. This is a gradual decrease over the last few years, despite the intensive survey work being carried out. The number of inmates at the Leprosarium also continues to diminish.

CHILD HEALTH

Dr. Edmonds draws attention in his report to an increase of births in 1971 of 12 per cent. over the 1970 figures. These births are in many instances taking place in new areas and as there has been difficulty in obtaining an adequacy of suitably trained nursing staff a number of items in the programme have been curtailed in order, as far as possible, to provide a clinic service for the mothers and babies or a suitable correspondence service.

Dr. Edmonds indicates the gradual improvement in the Infant Mortality Rate and shows that if we recorded the data in the method used prior to 1968 this year's figures would be the best on record

Dr. Edmonds shows some concern over the relatively low percentage of neonatal deaths to total deaths under one year of age, particularly where this has occurred in the Metropolitan area.

Simple proportions as measurements can, however, be misleading and a low proportion of neonatal deaths may mean either a high death rate of infants after the first month or particularly good care of infants at risk during the first month. The table in Appendix XX suggests that the latter may be the case in our 1971 figures as the Mortality Rate in Infants over a month has fallen from 6·6 in 1970 to 6·5 in 1971, but the Mortality under 1 month fell from 14·4 to 12·4.

Dr. Edmonds makes reference to an interesting pilot study carried out in the investigation of the pupils of a girls school for urinary tract infection by means of the Urocult tube.

Of 509 girls tested by the Urocult method 79 were suspicious and fully examined and 4 found to have chronic urinary tract infection. These 4 were the only ones whose Urocults gave unequivocal evidence of over 100,000 E. Coli per millilitre.

The importance of developing a rapid method of screening for urinary tract infection relates to the need to discover these hidden chronic infections which eventually lead to the destruction of the kidneys with fatal results.

OCCUPATIONAL HEALTH

Dr. Letham's report gives some idea of the extent of the development of this department and the diversity of its responsibilities, both in the protection of the worker and in the protection of the environment.

It is depressing and a sad reflection on attitudes to, and knowledge of, health hazards in industry in past decades that we continue to get fresh cases of silicosis and asbestosis. Because of the years that may elapse between exposure and symptoms appearing, we are likely to continue seeing fresh cases for years to come. One case of asbestosis was in a waterside worker whose only exposure to asbestos was in assisting in trans-shipment of Blue Asbestos fibres for export at Fremantle.

Sandblasting has been causing considerable concern and new Regulations for the reduction of risk to health in the industry and nuisance to people in the vicinity will be operative in 1972.

Commercial firms carrying out fumigation with toxic gases and their employees are being registered and new Regulations will require in 1972 that all commercial pest control firms obtain a licence from the Department in order to operate. This will ensure that both management and employees have an adequate knowledge of the means of pest control and the hazards associated with the substances they are using in that control.

The activities of the Clean Air Section extend from Port Hedland to Esperance and include monitoring of Sulphur oxides from the combustion of fuel in industry, the monitoring of dust fall-out from dusty industries including the iron ore activities in the N.W., carbon monoxide etc. from vehicles, fluoride from superphosphate works and brick kilns and so on. Dr. Letham has given an extensive summary of that section's activities together with diagrams and tables to show monitoring sites and results obtained. The chapter should be read in full to obtain some idea of work being done by the section for the protection of the environment.

PHYSICS DIVISION OF X-RAY LABORATORY

Mr. Barry King explains the working of his section under the Radioactive Substances Act.

The section monitors persons working in association with radiation, monitors equipment used in radiation and monitors the air and the rain for fall-out from nuclear explosions.

Unsatisfactory conditions have been found in some high schools where radiation is being used and steps have been taken to correct this.

The introduction of the microwave oven brought with it a new type of radiation and a new type of hazard. The Act had to be amended to meet the situation and to provide standards for control.

GENERAL SANITATION

The Chief Health Surveyor, Mr. Slattery, has given a very extensive account of the general activities of this section. This should be read in full to obtain some idea of the extent of the supervisory role exerted by the Department and the energy expended in this direction.

Among other things, Mr. Slattery's report deals with food inspection, abattoir supervision, rubbish and waste disposal, fly and mosquito control, safety of public buildings, caravan parks, general sanitary inspection and control of liquor standards.

HOSPITAL MORBIDITY STATISTICS

In 1971 for the first time our statistics are complete for all general and maternity hospitals, both public and private, throughout the State. As the private hospitals represent 23 per cent. of the patient discharges their inclusion in our statistics was essential to get a true picture of the situation. Private hospital patients are 66·9 per cent. surgical cases as compared to 54·8 per cent. in teaching hospitals and 27·6 per cent. in other public hospitals.

With the inclusion of private hospital patients in our recording, it is now possible to give complete coverage for cancer registration throughout the State. The registrations have in consequence considerably increased. The alteration in age distribution in discharges from hospitals between 1970 and 1971 indicates that the proportions of patients of the wage earning age groups are higher in private hospitals than in public hospitals. In other words, the public hospitals tend to get children and old age pensioners and the private hospitals the wage earners.

Statistical Tables have been produced to indicate the significance of alcoholism on the use of hospital beds. The tables show the distribution throughout the State of alcoholics in this respect.

In 1971 in our General Hospitals, Public and Private, 446 males and 111 females were treated for Alcoholism and Alcoholic Psychosis. These were chronic alcoholics, not " drunks ". They occupied 4,473 bed-days and their average age was 47 years.

Of these patients 21 were Aboriginal males and 24 Aboriginal females. This is a disparity in numbers compared with their 2–3 per cent. representation in the total population. There is a more extraordinary disparity in the proportions of male to female alcoholics between the total population and the Aboriginal population, i.e.—

$$\text{Total population} \quad \frac{M}{F} = \frac{446}{111}$$

$$\text{Aboriginal population} \quad \frac{M}{F} = \frac{21}{24}$$

In addition to the above, the Metropolitan Teaching Hospitals treated 467 men and 126 women for diseases in which alcoholism was shown as a secondary diagnosis. This occupied 9,250 bed-days. The average age of the men was 45 and the women 51.

The main causes of admission in these cases in which alcoholism was a secondary diagnosis were accident, mental upset, pneumonia and bronchitis and liver disease.

W. S. DAVIDSON
Commissioner of Public Health.

September 4, 1972

Appendix I

VITAL STATISTICS FOR WESTERN AUSTRALIA (*a*)

		1967	1968	1969	1970	1971
Mean population (*c*)	Males	449,039	467,781	488,419	508,394	527,564
	Females	430,154	446,734	465,377	483,326	501,022
Births	Males	9,322	10,070	10,595	11,172	12,498
	Females	8,701	9,471	10,159	10,446	11,741
Total		18,023	19,541	20,754	21,618	24,239
Birth rate per 1,000 of Mean Population (*c*)		20·50	21·37	21·76	21·80	23·57
Deaths	Males	3,956	4,338	4,313	4,392	4,536
	Females	2,823	3,120	3,037	3,151	3,270
Total		6,779	7,468	7,350	7,543	7,806
Death rate per 1,000 of Mean population (*c*)		7·71	8·17	7·71	7·61	7·59
Natural increase rate per 1,000 of Mean population (*c*)		12·79	13·20	14·05	14·19	15·98
Infant Mortality per 1,000 Live Births—						
Perth Statistical Division		13·5	17·1	18·3	18·1	17·0
Rest of State		23·5	25·7	27·8	27·0	23·2
Whole of State		17·4	20·4	21·8	21·2	19·1
Stillbirths (*b*)—						
Perth Statistical Division		118	155	165	184	194
Whole of State		188	243	250	295	298
Stillbirth rate per 1,000 total births		10·32	12·28	11·90	13·46	12·15

(*a*) Includes events among the total population, including Aborigines.

(*b*) From 1st January, 1968, the term " stillbirth " for registration purposes refers to a child of at least 20 weeks gestation, not born alive. Previously it was restricted to cases where the gestation period was at least 28 weeks.

(*c*) Revised in accordance with the preliminary results of the 1971 Census.

Appendix II

State Health Laboratory Services

Wm. Laurie, D.S.O., M.D., T.D.D., F.R.C.P.A.
Director.

I. ADMINISTRATION

General

The laboratory services continue to provide a State-wide combined hospital–public health service.

Accommodation

The building of the new laboratories began towards the end of 1971 but for financial reasons one half only will be built at present. This means there will be a limited improvement only in the present cramped working conditions. In the meantime, the laboratories have to be housed in several areas some distance from each other. At the rate of increase in work further building will be necessary in the near future.

Tours and Conferences

In 1971 the Director was appointed a member of the World Health Organization Expert Committee on Laboratory Services and spent some days in Geneva at a meeting to bring the WHO Laboratory Handbooks up to date. En route, he visited laboratories in North America and Britain, then spent some days in the Philippines.

During May, the Head of the Division of Microbiology attended meetings of the DS/3 and DS/5 Standards Association Committee on Microbiological Testing of Dairy Products in Sydney.

Early in 1971 the Head of the Division of Pathology attended a Symposium in Sydney on Automation in Laboratory Work, and on his return journey visited Adelaide to see their developments in automation, etc.

Later in the year he spent several weeks in the Philippines as a WHO consultant on laboratory work connected with nutrition in children.

Shortly after his appointment to the Department, a pathologist visited Singapore which was the venue of the Geographical Pathology conference.

While on long service leave the Officer-in-Charge of the Serology Division spent some time in laboratories in England, including the V.D. Reference Laboratory, London ; the Scotland Yard Forensic Laboratory ; the Institute for Diseases of the Chest Laboratory, Brompton, London, and the Paediatrics Research Unit, Guys Hospital ; she also attended the Fourth International Congress on Human Genetics in Paris.

Visitors

During the year we received much help from distinguished overseas workers including Dr. C. O. Carter, Director of the Clinical Genetics Unit of the Medical Research Council, London ; Professor Pepys of the Institute for Diseases of the Chest, Brompton, London ; Dr. R. Sansonnens, Adviser on Health Laboratory Services of the World Health Organization, Pacific Region, and Mrs. Ramona Lunt, Cytology Programme, Cancer Unit, WHO, Geneva.

Working Hours

As is being done in many areas, the laboratories work for much of the 24 hours every day : this is still being done by overtime payment which is very unsatisfactory and more expensive than would be a shift system of work.

Laboratory Costs

As is to be expected from the steadily increasing demands on the laboratories (a minimal increase of 20 per cent. per annum), the total cost of the service is rising steadily *pari passu*, with a substantial increase in payment for work done. However, the figure of increasing costs is misleading. Analysis of the cost per unit of work shows that this continues to fall, a phenomenon which must be almost unique in this decade of spiralling costs.

Equipment

It has been possible to obtain a substantial sum towards the purchase of new equipment although the sum is much less than the $250,000 required fully to replace old obsolescent equipment. Much of this old equipment has been kept in use only by a highly efficient maintenance service—see below.

Stores

The Stores still continue to provide an important contribution towards the smooth running of the services. The transfer of the senior stores officer in late 1971 was a significant loss.

Instrument and Reagent Unit

This unit is housed in Claremont Mental Hospital by kind permission of the authorities concerned : its functions include the following :—

> *Reagent preparation—automation reagents*—The demands have increased considerably partly due to survey work. Unfortunately, owing to lack of space and other facilities, it has not been possible yet fully to meet demands for automation reagents. The output for 1971 was 3,500 litres.
>
> *Reagent preparation—manual laboratory reagents*—This demand has also increased considerably, due to increased requirements of the Branch Laboratories in the country. Quality control materials now are issued to the Branch Laboratories from this unit.

Instrumentation

As mentioned above, the maintenance of obsolescent equipment has been a heavy load.

Distilled and Deionised Water

The needs of the Central Laboratories are now met from this unit which also supplies other laboratories in the area.

II. STAFF

As shown in Table IA in the Appendix, the work increased by over 20 per cent. in 1971 : this rate of increase is in keeping with that reported by laboratories in many parts of the world. As a result of this rising demand each addition of staff, equipment and working space has been gobbled up almost before it is brought into use. The picture suggests a puppy chasing its own tail.

1. Changes (including Branch Laboratories)

Position	Recruited	Resigned
Pathologists	1	....
Medical Registrars	....	....
Senior Technologists	....	1
Technologists	19	12
Cadet Technologists	5	....
Laboratory Assistants	11	8
Laboratory Attendants	48	39
Nurses	9	8
Clerks	1	1
Typists	4	3
Storemen	4	2
Watchmen	1	1

The high rate of staff turnover continues. This is almost wholly due to the higher salaries obtainable in other laboratories and in industry. As one example, a laboratory assistant resigned recently to take up work in another laboratory at exactly twice the salary obtainable in the public service.

2. Sickness

The over-all sickness rate rose by 16·5 per cent. compared with the sickness rate in 1970 : this represents 1·54 per cent. of 94,000 man days : the lower the salary scale the higher the incidence of sickness.

Sickness Analysis

Medical staff	who make up	4%	of the work force accounted for	0·8%	of the recorded working days lost.
Senior Technologists	,,	12%	,, ,,	1·6%	,, ,, ,, ,,
Technologists	,,	16%	,, ,,	10·9%	,, ,, ,, ,,
Nurses	,,	3%	,, ,,	1·8%	,, ,, ,, ,,
Clerical Staff	,,	16%	,, ,,	8·2%	,, ,, ,, ,,
Laboratory Assistants	,,	8%	,, ,,	8·1%	,, ,, ,, ,,
Laboratory Attendants	,,	34%	,, ,,	68·0%	,, ,, ,, ,,
Cadet Technologists	,,	7%	,, ,,	0·6%	,, ,, ,, ,,

3. Training of Technologists

The 3-years' full-time course of technology training carried out at the Western Australian Institute of Technology has proved highly successful and the finished product has proved to be well trained technologists.

4. Clerical Staff

Shortage is still a serious problem, and small increases in the number of clerical workers have not been sufficient to relieve the bottle-neck : some sections of the laboratory now send out hand-written reports. This whole area of work requires complete reorganisation but as yet it has not been possible to obtain the help of an Organisation and Methods team.

III. WORK DONE, 1971

1. General

The work done in 1971 is tabulated in the Appendix.

Table IA gives a summary of the work done in the Central Laboratories : this shows an increase of over 20 per cent., both in unit values and in tests. It must again be pointed out that the laboratories do not create demands : they only meet the needs of clinicians. This continuing spiral of demand eats up the increases in staff and space as fast as such extra help is given, and eats up the budget for the year before the end of the financial year.

A time must soon come when it will be necessary critically to review the demands on the laboratories and to ask whether such demands are really necessary. This is now being highligted by the increase in demands for the screening of executives, etc.

Table IB details the work done in the Country Branch Laboratories : here the increase is much less marked than in the Central Laboratories, and serves to accentuate our criticism of unnecessary demand in that, with the depression in agriculture, the demands on the Country Laboratories have slowed considerably, and probably represent true necessary investigations compared with routine screening.

2. Microbiology

Tables IIA–F of the Appendix give details of the work carried out during 1971.

Over-all, there was an increase in work done compared with 1970, especially in the Virus Laboratory and in clinical microbiology from the Sir Charles Gairdner Hospital. Much of the increase in work load is of a type lending itself to automation and this is now being studied.

Details of work done in each section are given below.

Clinical Bacteriology

As shown in Table IIA of the Appendix there has been a 21 per cent. increase in work. Among the most interesting findings were 18 isolations of *Mycoplasma* out of 104 clinical specimens, one of which was *M.pneumoniae* from a patient with respiratory infection. It is noteworthy that this is only the third isolation of *M.pneumoniae* in Western Australia and this paucity of the agent of atypical pneumoniae appears to be common for the whole of Australia and similar to Britain but quite different from the large numbers of isolations in other parts of the world.

Phage typing of staphylococci represented a heavy work load : details are given in Table A below : during the year 1,617 strains of *Staphylococcus aureus* were phage-typed. In addition, 119 strains were typed from the University Department of Microbiology of a large teaching hospital. A total of 972 strains of *Salmonella typhimurium* were also studied in detail with a view to publication.

Throughout the year there was a weekly review of potential sources of infection in the Sir Charles Gairdner Hospital : this included the operating theatres, the central sterilising department and the intensive care unit. Certain potential dangers were brought to light.

Also, in the Sir Charles Gairdner Hospital, the food hygiene section took part in a study of pre-cooked frozen foods thawed after storage at —20°C. The results were quite satisfactory. When high counts were obtained they represented foods in which the level of handling was considerable. No specific pathogens were isolated from any sample.

Twenty-two " Television Dinners " were also examined during the year. Twelve of the 22 showed *Staph. aureus,* of which 8 were pathogenic and potentially causes of food poisoning outbreaks, although no clinical material was made available for examination.

TABLE A

PHAGE GROUP DISTRIBUTION (%)

***	Children's Hospital 280	Repatriation Hospital 215	Long-term Patients Royal Perth Hospital 254	Sir Charles Gairdner Hospital 145	Country Laboratories 454	Naval Recruits Base 41
Group 1	18	13	23	25	30	42
Group 2	18	8	5	15·5	10	7
Group 3	20	26·5	29	24·5	17	15
Group 4	0·5	1·5	0·5	....	2	....
80/81	14·5	22	19·5	11	14	7
Mixed	4	4	1	....	3	....
Not Typable	25	26	20	24	24	29

*** These figures represent Staph. strains submitted for typing.
In addition, 119 strains were typed as part of research projects.
29 strains were isolated from foodstuffs, and
80 strains from miscellaneous sources,
making a total of 1,617 strains typed.

Water and Sewerage Surveys

Table IIB, Appendix, shows an increase of 19 per cent. in work done during the year compared with 1970. The work included an investigation into the part being played by Actinomycetes in causing unpalatable tastes in metropolitan drinking waters. Over a 19-weeks' period a total of 1,710 samples were taken from 43 different water storage areas, reservoirs, etc. Sixty-six of the samples proved positive. These isolations were not related to the total bacterial counts or the level of coliform bacilli present. The positive findings showed a random distribution and occurred both in chlorinated and unchlorinated waters. However, the investigations did not uncover the source of the tainting of the water.

Enterobacteriaceae Laboratory

The work done in this section during 1971 increased by 27 per cent. compared with work done in 1970—see Table IIC of the Appendix. A detailed report of isolations will be issued as a separate publication.

Developmental work on special media proved the value of strontium chloride and strontium selenite media. This has been confirmed in other laboratories and details have been published—see Section VI, " Publications ".

Of particular interest was the appearance of *Salmonella havana* which was traced to abattoir contamination.

Mycobacteria

Table IID of the Appendix summarises the work of this section. Over-all, there was a slight fall in the work done compared with that done in 1970. However, there was much work done on the serological differential typing of atypical Mycobacteria strains. This showed the diverse nature of strains of Mycobacteria isolated from clinical specimens and from soil samples.

Details of the isolations and identification of Mycobacteria are given in Table B below.

TABLE B

MYCOBACTERIA—ISOLATION AND IDENTIFICATION, 1971

Material	M. tuberculosis	M. bovis	Runyon				Total
			Group I	Group II	Group III	Group IV	
Sputa, etc.	458	....	....	25	142	22	647
Urine	22	....	....	....	....	1	23
Other Tissues	8	3 (BCG)	....	....	4	....	15
Animal Material	....	....	....	....	7	....	7
Soil, Dust, etc.....	....	....	....	2	45	14	61
Referred Strains	57	....	....	1	22	2	82
Total	545	3	....	28	220	39	835

Mycology

The work of the Mycology section is summarised in Table IIE in the Appendix. This shows an increase of 58 per cent. in the work done. The work was much expedited by being moved into new suitable quarters near to the major sources of clinical material.

Dermatomycoses continue to be common in Western Australia and Trichophyton species are almost as common in adults as are *Microsporum canis* infections in children. Almost all the feet infections are due to Trichophyton, while *Epidermophyton floccosum* is almost always found in the groin and perineum. *Microsporum gypseum* cases increased during the year.

Virology

The work of this laboratory is summarised in Table IIF of the Appendix and in Table C below, which gives details of the increase in work since 1965. As already stated, much of this increase is in serology which would be greatly facilitated by automation.

TABLE C

TOTAL SPECIMENS EXAMINED FOR VIRUS ISOLATION AND SEROLOGY, 1965–1971

	1965	1966	1967	1968	1969	1970	1971
Isolation	1,686	2,957	2,654	2,859	3,081	5,117	6,163
Serology	740	990	1,315	1,846	4,392	10,539	13,730
Total	2,426	3,947	3,969	4,705	7,473	15,656	19,893

This Virology Laboratory is the only one in the State which is providing a diagnostic service and this necessitates much developmental work. This is hampered by the crowded working conditions.

During the year examinations for Australia antigen were put into routine practice and immunofluorescent diagnosis of various diseases was extended to include Respiratory Syncytial virus, Parainfluenza virus, Influenza viruses, and Rubella virus.

During 1971 a considerable increase was noted of serology findings suggestive of Coxsackie B infections, expecially in pancarditis. This study is being continued in collaboration with clinicians.

In January and February, 1971, there occurred a severe outbreak of gastroenteritis and bronchopneumonia (with some fatalities) in the North-West of Western Australia : Adenovirus 7 was isolated from a number of specimens. In fact, adenovirus infections were associated with much respiratory illness during the early months of the year.

In January also, a small explosive outbreak of Q fever occurred in an abattoir. The diagnosis was made by serology methods in a high proportion of cases.

In Table D hereunder details are given of the method of diagnosis.

TABLE D

ISOLATIONS AND SEROLOGICAL DIAGNOSIS OF VIRUS INFECTIONS

Virus		Isolates	Serological Diagnosis
Poliovirus	1	24	
	2	36	1
	3	26	
Coxsackie A	9	19	
Coxsackie A (untyped)		77	2
Coxsackie B	1	16	10
	2	13	12
	3	48	21
	4	15	31
	5	42	10
ECHOvirus	1	5	
	3	9	
	6	3	
	8	2	
	11	6	
	18	3	
	20	2	
	21	2	
	22	16	
	23	5	
	33	2	
Nos. 16, 24, 26, 27, 30 and 31		1 each	
(untyped)		68	
REOvirus	1	8	
(untyped)		2	
Adenovirus	1	42	1
	2	77	
	3	33	
	4	3	
	5	24	
	6	13	
	7	55	
	14	3	
	15	3	
	21	4	
(untyped)		52	17
Influenza A		16	6
Influenza B		24	14
Influenza C		....	3
Parainfluenza	1	23	11
	2	3	
	3	29	
Respiratory Syncytial virus		43	18
Mumps		13	8
Measles		1	5
Myxovirus untyped		2	
Rhinovirus H		4	
M		4	
Mycoplasma pneumoniae		....	11
Coxiella burnetti		....	11
Psittacosis		....	3
Coronavirus		....	18
Herpes simplex	1	100	3
	2	5	
Varicella		5	2
Cytomegalovirus		18	
Vaccinia		1	
Orf		1	
Poxvirus		1	
Rubella		2	37
Ross River virus		....	15
Australia Antigen		....	37
Epstein Barr virus		4	168

3. Biochemistry

This year's work is summarised in Table III of the Appendix. There was again an increase in work load this year of 9 per cent. Efforts were made to curtail much of the survey type work done in previous years as the unit has now reached the limit of testing capability with its present floor area and staff. There is now no room either for additional staff or even major new items of equipment. Despite efforts to restrict growth of work load, the Sir Charles Gairdner Hospital demands continued to increase—quite naturally as the hospital bed state grew.

Between 1970 and 1971, there was no marked difference in the numbers of the most common tests done—those that are automated. 1971 saw the emergence of several new tests, however, and the growth of others, reflecting modern thinking in the section. For example, creatine phosphokinase tests increased by a factor of 10, and for the first time aldosterone estimations were possible.

Undoubtedly, the most striking growth was in the toxicology section. The numbers and diversity of drug tests increased markedly. Methods were adopted and improved for the analysis of such drugs as Dilantin, Amphetamines, Barbiturates, etc. A method was published for the analysis of a new drug of the antidepressant class.

In addition to drug analysis, industrial samples were submitted in increasing numbers to this section, reflecting the current world interest in pollution control. Such analyses as total mercury and organic mercury in foodstuffs, polychlorinated biphenyls in fish and packaging materials, benzyprene in the atmosphere and organophosphorus insecticides became commonplace. At the moment, shortage of space precludes any further development in the section.

There were no major changes in staffing or space available during the year and the latter is still minimal. This point has already been laboured and will not be mentioned again this year. New equipment obtained during the year included another gas chromatograph, a mercury analyser, a blood gas machine and a small Hitachi colorimeter.

Changing patterns of demands led to cholesterol and triglycerides being run on a two channel autoanalyser, and G.O.T. and creatine phosphokinase were also arranged on another two channel analyser.

The happy relation with the Royal Perth Hospital over quality control continued, and the scale and scope of quality control work increased. Methodology for country laboratories was reviewed and each centre issued with a new set of standard biochemical methods. Reagents arrived with more promptness and were generally satisfactory in quality.

Small research projects in blood lead levels and cations in heart muscle, infarcted and normal, continued. Follow-up analyses from small groups of the main Busselton Survey were done—chiefly those with some abnormality such as glucose levels etc. A survey was undertaken at Cunderdin of biochemical and haematological parameters in the population, and the section co-operated in various analyses.

4. Haematology

The work of the department is summarised in Table IV of the Appendix. The total of tests for the year shows an increase of no less than 64·5 per cent., due mainly to the greater volume of requests from the local teaching hospital, though the State work also showed an upward trend. The increases affected all branches of haematology—the basic parameters of the blood, film examinations, cross matching, folic acid and Vitamin B_{12} analysis and coagulation work. The reversal of recent experience—a greater percentage of work from the local hospital, was due both to the rising bed state of this institution and to the lack of major surveys during the year.

Undoubtedly the haematology department is better staffed professionally and technically than ever before. The return of the officer in charge after a prolonged period at the Royal Postgraduate Medical School, London, meant that for the first time the department was in the charge of an officer whose main interest and training were in this branch of pathology. One junior officer continued to serve, becoming a registrar in the early part of the year. The technical staff showed less fluctuation than ever before and more officers were semi-permanent in the department. This again improved the accuracy and precision of work.

While space was again at a premium, it was not quite so restricted as formerly following a re-organisation. This very minor relief was appreciated in the department.

The major improvement so far as equipment is concerned was the installation of a Coulter S Counter which effectively automated the basic parameter testing. After a few teething troubles, this piece of apparatus has been a great boon. Also purchased was a fibrometer system to assist in coagulation testing. The range of investigations was widened especially in the coagulation field, and preliminary attempts were made to improve and standardise the prothrombin time tests. After various controlled trials with commercial thromboplastins, it was decided that the department should prepare its own and standardise this against the International material supplied by the Medical Research Council of Great Britain.

Vitamin B12 assays were done both microbio logically and by radio-isotopic methods though no firm decision was made as to which would be adopted as the main method. Small surveys at Cunderdin and for hookworm effects in the northern part of the State were easily absorbed by the staff.

Some thought should be given to presenting the statistics of automated machinery as block totals without separating into constituent analyses. Thus every haemoglobin now is accompanied by W.B.C. and R.B.C. counts, haematocrit estimation and derived parameters. This might best be shown as a haematology screen test.

5. Blood Collection

Necessarily, this has expanded in parallel with the increased demand of the Sir Charles Gairdner Hospital.

6. Radioisotopes

The work of the section is shown in Table V of the Appendix. It will be noted that there was an anticipated 50 per cent. increase over the numbers of tests requested in 1970. For the first time numerous thyroid and insulin studies were requested in connection with limited assessments of people suspected of having some disorder of endocrine dysfunction on larger studies, such as the Busselton Survey. It will be noted, also, that only a small proportion of the requests came from the Sir Charles Gairdner Hospital—less than one quarter. Country practitioners have shown a marked interest, especially in thyroid tests.

The staff showed no major change during the year, and the working quarters remain as before. The installation of an automated Packhard Liquid Scintillation Counter with autogamma attachment allowed the increase of work to be absorbed without increasing staff. A start was made on tritium and C 14 counting. For example, the digoxin assay was offered routinely at the end of the year.

7. Morbid Anatomy and Cytology

Table VIA of the Appendix contains details of the work done during the year. Once again, there has been a marked increase in biopsies of a surgical nature. If the number of cases (5,911) is combined with miscellaneous (308) as was done in the previous year's report, the grand total—6,219, represents an increase of 12·8 per cent. on 1970 and no less than 36 per cent. on 1969. Once again this was the busiest biopsy service in the State. (Miscellaneous biopsy cases are those referred from other departments in the laboratory.) The increase in depth of investigation is shown by a 50 per cent. increase in specially stained sections, and the increasing use made of the unit by the Sir Charles Gairdner Hospital in a jump in frozen sections requested from 156 to 262. At the same time the number of hospital autopsies increased.

Accommodation

The space available was pitifully small at the beginning of the year; quite inadequate for the work done. It consisted of one hut—560 square feet, and a room adjacent to the hospital mortuary for autopsy specimens and heart injection work. The acquisition of a disused house nearby for mainly experimental purposes enabled a portion of the histology staff to be accommodated there with great relief in the overcrowding then present, but with some extra difficulty in administration. At present, processing, blocking, section cutting and routine staining are done in this house, special staining and procedures in the older hut.

The new buildings have been commenced—but only in the southern or Microbiology block. It seems to be the intention to divide this new unit amongst most of the laboratory sections, though original planning was not to this end.

Staff

The staff was increased by one pathologist (Morbid Anatomy and Histopathology) on 15th February, 1971. This made the combined histology/cytology staff effectively 3 (the Director and Head of the Division of Pathology having other commitments counting effectively as 1). No registrars were employed, there being a dearth of junior people interested in pathology. It is interesting to note that the Royal College of Pathologists recommend 4 consultants for the work load that is carried here for laboratories without undergraduate teaching commitments, and twice this for those with such commitments plus supporting junior medical staff in training.

It has been possible to increase the number of technologists and senior technologists permanent or more or less permanent in the Morbid Anatomy/Histopathology area from 2 to 4. This has undoubtedly produced a much higher standard of work, though the number available totally is still inadequate by modern standards.

Equipment

During the year an automatic tissue processor which processes far faster than the usual was purchased, as were a new cryostat and a complete fluorescent microscope.

Scope of Work and Research

The staff position enabled a start to be made in immunofluorescent work in human tissues. All the usual examinations are now available on a routine basis e.g. antinuclear factor, thyroid antibodies, parietal cell antibodies, muscle antibodies, etc. Macrosections of lungs are produced routinely. A re-organisation of leprosy biopsy work was arranged and produced more definitive results.

Apart from continuing studies on heart lesions and the great vessels, one worker proceeded with investigation of cytology of the larynx in normals and abnormals. In view of the increasing amount of haematite mined, an investigation was started into the possible effects of such dust on humans and, experimentally, on rats—whether we could implicate silica or any other material. A pilot experiment was so successful that a full-time investigation was launched towards the end of the year.

Forensic Pathology

For work done during the year see Table VIA of the Appendix. Again, no major changes in organisation or staff occurred during 1971. The number of autopsies performed was roughly similar to 1970, though there was an increase in homicide necessitating more travelling in the State. The number of specimens prepared, again, was similar in the two years. Toxicological specimens were examined in greater numbers in the biochemical section, and the range of drugs for which analysis is possible increased considerably.

Accommodation was again a difficulty, and part of the staff remained in West Perth.

It is to be kept in mind that the number of necropsies carried out is no guide to the demand made on the Forensic Section: in future, some indications will be given of the related work, e.g. appearances in court.

Cytology

Table VIB contains details of work done during 1971. The total number of cases submitted for examination in 1971 showed an increase of 16 per cent. as compared with 1970, and there has been an increase of 43 per cent. since 1969. Both sputum and cervical cytology shared in the increase, the former slightly more than the latter.

Accommodation continued to be a problem, especially for the cervical screeners. The lack of space meant continued fragmentation of the service, not in the best interests of efficiency. There were no major changes of staff during the year. Equipment obtained included a cytocentrifuge.

Undoubtedly, if high standards are to be maintained, thought needs to be given to the housing of cytology in a more satisfactory manner. The training of screeners has been put on a more satisfactory basis through a part-time course at a local technical institute.

The number of cervical specimens increased but still only represents a small fraction of the women at risk and compares poorly with the numbers of women screened in other States. However, this is not the most important problem : for every woman who develops uterine cancer at least ten individuals develop lung cancer, and much more attention should be paid to the sputum screening of high-risk individuals, e.g. heavy smokers over the age of 40, with a chronic cough or blood-streaking of sputum, etc. This is an especially serious need as the incidence of lung cancer seems to be doubling every ten years.

8. Serology

The work of this section is summarised in Table VII of the Appendix.

A small increase in staff has somewhat eased the serious shortage but the increasing work is rapidly catching up with this small increase.

Accommodation is now seriously insufficient and arrangements have been made to move the forensic serology and cytogenetics work to rented accommodation some distance from the main laboratories.

Early in 1971 there was a drop in the number of requests for treponemal serology tests, possibly due to private laboratories undertaking this work : later in the year the numbers increased again, with the opening of a " Special Treatment " clinic. Developmental work is in hand with a view to automating certain of the treponemal serology tests.

During 1971 there has been a large increase in forensic serology. A senior technologist has been appointed full-time to this work. During the absence of the Director overseas in late 1971 this work was again taken over by the Principal Technologist.

Since April 1971 the carrying out of pregnancy tests has been handed over to the Branch Laboratories but quantitative tests are still being done in the Central Laboratories.

Aspergillosis agar-gel diffusion tests are now done on request : 14 positive results were obtained in 1971 : during his visit Professor Pepys discussed this work in detail with the staff.

Toxoplasmosis tests are now increasingly being requested : one case of fatal congenital toxoplasmosis was diagnosed. Trials are being carried out on immunofluorescent work in this field.

Cytogenetics work has greatly increased and now includes requests for chromosome analysis from amniotic fluid : the work of this section has been expanded by the appointment part-time of a consultant physician.

Developmental work includes investigations into agar-gel diffusion tests for bird-fanciers' disease, haemagglutination test for syphilis and the fluorescent test for toxoplasmosis.

From a survey in the country 860 sera from children were screened for toxoplasma and leptospira antibodies: none showed serological scars suggesting contact with leptospires but 392 had toxoplasma antibodies.

IV. BRANCH LABORATORIES

With the continued expansion in the North-West of Western Australia there has been a springing-up of townships in isolated areas. This has led to requests for new laboratories and two such are now being planned.

As shown in Table IB of the Appendix, the work of the Branch Laboratories is increasing but at a slower rate than before and in a patchy distribution. This reflects the depressed state of primary industry at present. A big step forward in improving the service to country practitioners has been the establishment of a system of Telex communications with country laboratories from the Central Laboratory.

Housing of staff has improved somewhat in a few areas but sooner or later it will be necessary to provide housing in all country areas. Transport has been supplied in a few areas.

Quality control work continues routinely and visits to country laboratories by senior staff are carried out as often as possible.

The work of the country laboratories is of great importance and the staff deserve much credit. Some country branches have been starved of staff because permission to increase establishment has not kept pace with demand. Increased work has been most pressing in the Central Laboratories (due to our responsibilities in a major hospital), and the country service has suffered to some extent.

It has been possible to maintain our liaison with the Commonwealth Health Laboratory at Kalgoorlie, whose staff participate in our Quality Control programme, and to whom we supply some culture media and emergency supplies.

We have also bee able to accept responsibility for a portion of the after-hours emergency roster duties of the Repatriation General Hospital, Hollywood, as an expedient because of a temporary shortage of qualified staff at that hospital.

V. RESEARCH

Developmental work and applied research continue but still on a limited and piecemeal basis due to lack of time, space and equipment.

VI. PUBLICATIONS

The following is a list of papers by members of the Department published during 1971:

1. "Sputum Cytology in the Diagnosis of Bronchial Carcinoma" by W. Laurie and L. G. Szaloky, *Med. J. Australia*, 1971, 1:247.
2. "Prevention of Myocardial Infarction" by W. Laurie, *Med. J. Australia*, 1971, 1:361.
3. "Alcohol as a Cause of Sudden Unexpected Death" by W. Laurie, *Med. J. Australia*, 1971, 1:1224.
4. "Aortic Root Hypoplasia and Sudden Unexpected Death" by W. Laurie, *Journal of Forensic Medicine*, 18:4, October-December, 1971.
5. "Laryngeal Cytology. Histological Basis and Clinical Applications" by Gladstone R. Osborn and Jack Sunderman, *Med. J. Australia*, 1971, 2:756.
6. "Strontium chloride B and E.E. enrichment broth media for the isolation of *Edwardsiella*, *Salmonella* and *Arizona* species from tiger snakes" by J. B. Iveson, *J. Hyg.*, Camb. (1971), *69*.

VII. TEACHING

Teaching shows no change and represents a heavy but important commitment.

VIII. SURVEYS

The work on the survey of Busselton children proved rewarding and towards the end of the year a large survey of the population of Cunderdin, a major country town, was undertaken.

IX. ACKNOWLEDGMENTS

I am indebted to all laboratory staff and to the Country Laboratories especially for their continued high level of work. Much assistance has also been given by colleagues in Australia and overseas.

APPENDIX TABLES
STATE HEALTH LABORATORY SERVICES
ANNUAL REPORT, 1971

Table IA

STATE HEALTH LABORATORIES—SUMMARY OF WORK DONE 1971

	Source								Total 1971		Total 1970		1971 Increase %	
	State		Commonwealth		S.C.G.H.		Others							
	Tests	Unit Value	Tests	Unit Value	Tests	Unit Value	Tests	Unit Value	Tests	Unit Value	Tests	Unit Value	Tests	Unit Value
Microbiology—														
A. Clinical Bacteriology	37,925	233,273	6,138	28,724	31,142	161,450	5,879	30,576	81,084	454,023	69,461	374,393	16·7	21·3
B. Waters and Sewerage	12,731	127,310	....	....	....	....	....	....	12,731	127,310	10,668	106,680	19·3	19·3
C. Enteric Diseases	23,686	330,878	491	5,390	593	5,530	....	....	24,770	341,798	20,122	269,284	23·1	26·9
D. Mycobacteria	....	....	27,983	163,578	....	....	....	....	27,983	163,578	29,064	175,549	....	....
E. Mycology	15,272	115,601	355	2,796	5,258	35,208	....	....	20,885	153,605	15,775	97,261	32·4	57·9
F. Virology	178,647	1,512,902	2,936	27,890	15,142	91,790	....	....	196,725	1,632,582	151,181	1,147,387	30·1	42·2
Biochemistry	90,413	872,531	7,075	71,362	209,825	1,883,382	28,128	271,627	335,441	3,098,902	307,268	2,783,864	9·2	11·3
Haematology	35,717	146,589	4,003	24,854	129,491	479,910	15,542	80,438	184,753	731,791	112,321	494,421	64·5	48·0
Radioisotope	4,785	192,828	573	23,644	2,390	96,576	2,331	93,908	10,079	406,956	6,749	274,520	49·3	48·2
HISTOPATHOLOGY—														
A. Histopathology and Morbid Anatomy	28,751	635,355	1,422	21,515	6,663	124,920	6,257	93,855	43,093	875,645	37,361	792,775	15·3	10·5
B. Cytology	3,206	48,090	3,496	52,440	5,026	75,390	8,815	132,225	20,543	308,145	17,332	259,980	18·5	18·5
Serology	84,618	563,370	3,444	20,794	5,796	45,215	1,177	15,310	95,035	644,689	88,930	590,186	6·9	9·2
Total	515,751	4,778,727	57,916	442,987	411,326	2,999,371	68,129	717,939	1,053,122	8,939,024	866,232	7,366,300	21·6	21·4

Table IB

STATE HEALTH BRANCH LABORATORIES—SUMMARY OF WORK DONE, 1971

	Total 1971		Total 1970		Increase—1971	
	Tests	Units	Tests	Units	Tests	Units
					%	%
Albany	26,124	131,059	22,055	116,150	18·4	12·8
Broome	10,751	55,693	10,464	60,078	2·7	....
Bunbury	36,448	200,108	32,518	176,222	12·1	13·6
Busselton	16,620	89,359	16,290	82,779	2·0	7·9
Carnarvon	19,742	107,250	17,433	89,892	13·2	19·3
Collie	6,224	29,873	4,326	21,336	43·9	40·0
Derby	34,874	172,034	28,646	149,465	21·7	15·1
Esperance	7,285	38,397	4,990	28,788	Opened	April, 1970
Geraldton	37,232	193,233	36,057	187,414	3·3	3·1
Manjimup	16,699	85,428	15,797	84,885	5·7	0·6
Margaret River/Augusta	3,262	18,172	4,287	24,922	....	....
Merredin	12,461	68,288	13,342	72,329	....	....
Narrogin	24,841	138,776	23,040	122,994	7·8	12·8
Northam	16,315	94,799	12,030	66,263	35·6	43·1
Pinjarra	2,158	9,090	....	....	Records	May-December 1971
Port Hedland....	22,025	125,057	18,352	101,544	20·0	23·2
Wyndham	12,519	73,663	10,409	53,860	20·3	36·8
Total	305,580	1,630,279	270,084	1,439,120	13·1	13·3

Table IIA

CLINICAL BACTERIOLOGY—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Hospital	Others			
							%
Animal Inoculations	....	....	....	....	....	3	....
Blood Specimens	130	2	1,537	7	1,676	843	98·8
C.S.F. Specimens	24	....	425	27	476	305	56·1
Faeces Specimens	14	....	31	....	45	74	....
Foodstuffs—Fresh, Tinned or Frozen	3,029	....	....	....	3,029	2,084	45·3
Sensitivity Tests	5,167	132	4,544	1,244	11,087	8,958	23·8
Serous Effusions	35	4	610	14	663	409	62·1
Sputum	406	208	6,486	416	7,516	5,898	27·4
Swabs all sources	1,433	126	2,286	904	4,749	4,158	14·2
Urine Examinations	1,879	471	13,387	3,229	18,966	16,735	13·3
Vaginal specimens and all other urogenital specimens .... Venereal Diseases	19,982	4,761	1,019	....	25,762	25,818	....
Water	400	....	....	....	400	220	81·8
Others	5,426	434	817	38	6,715	3,956	69·7
Total—							
Tests	37,925	6,138	31,142	5,879	81,084	69,461	16·7
Unit Values	233,273	28,724	161,450	30,576	454,023	374,393	21·3

Table IIB

WATER AND SEWERAGE SURVEYS—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Hospital	Others			
							%
Water—							
A. Drinking	7,414	....	....	....	7,414	6,806	8·9
B. River, Ocean	3,130	....	....	....	3,130	2,621	19·4
C. Sewerage	2,187	....	....	....	2,187	1,241	76·2
D. Membrane Filters	....	....	....	....	....	....	....
Cool Drinks	....	....	....	....	....	....	....
Total—							
Tests	12,731	....	....	....	12,731	10,668	19·3
Unit Values	....	....	....	....	127,310	106,680	19·3

Table IIC

ENTERIC DISEASES LABORATORY—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Hospital	Others			
							%
Animal Inoculation	2,161	....	....	....	2,161	284	7·6 times
Blood Specimens	....	....	....	....	....	....	....
Faeces Specimens	13,502	401	587	....	14,490	13,416	8·0
Foodstuffs—Fresh, Frozen or Tinned	2,489	....	....	....	2,489	1,601	55·5
Fertilisers	8	....	....	....	8	20	....
Sensitivities	2,301	50	6	....	2,357	2,172	8·5
Sputum	....	....	....	....	....	....	....
Others	3,225	40	....	....	3,265	2,629	24·2
Total—							
Tests	23,686	491	593	....	24,770	20,122	23·1
Unit Values	330,878	5,390	5,530	....	341,798	269,284	26·9

Table IID

TUBERCULOSIS SECTION—EXAMINATIONS IN 1971

Type of Examination		1971 Total	1970 Total	1971 Increase
Sputum—				
Direct Smears	12	20,723	19,221	7·8%
Centrifuged Deposits	10,306			
Cultures	10,305			
Direct Guinea Pig Inoculations	100			
Gastric Contents—				
Centrifuged Deposits	309	632	665	..
Cultures	309			
Direct Guinea Pig Inoculations	14			
Laryngeal Swabs—				
Centrifuged Deposits	1	3	....	....
Cultures	1			
Direct Guinea Pig Inoculations	1			
Pleural Fluids—				
Centrifuged Deposits	89	267	274	..
Cultures	89			
Direct Guinea Pig Inoculations	89			
Bronchial Lavage—				
Centrifuged Deposits	6	15	2	7½ times
Cultures	6			
Direct Guinea Pig Inoculations	3			
Cerebral Spinal Fluid—				
Centrifuged Deposits	15	47	78	..
Cultures	15			
Direct Guinea Pig Inoculations	17			
Urine—				
Centrifuged Deposits	678	2,035	2,380	....
Cultures	678			
Direct Guinea Pig Inoculations	679			
Miscellaneous—				
Centrifuged Deposits	892	2,292	3,319	....
Cultures	892			
Direct Guinea Pig Inoculations	508			
Smears for M. Leprae	....	16	135	....
Virulence Tests	....	178	263	....
Sensitivity Tests	....	722	955	....
Confirmation Tests	....	878	1,701	....
I.N.A.H. Level	....	175	71	146·5%
Total—				
Tests	....	27,983	29,064	..
Units	....	163,578	175,549	....

Number of Specimens	12,515
Number of Positive Cultures	826

Table IIE

MYCOLOGY—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Commonwealth	Hospital	Others			
							%
Skin, Hair, Nails	7,264	154	124	....	7,542	15,775	32·4
Swabs—							
Sputum, CSF, P.M., Biopsy, Drainage and wound	370	84	1,537	....	1,991		
Cerv. Vag., Throat, Mouth, Ear	5,512	113	3,566	....	9,191		
Identifications—							
Candida and Trichophyton	861	4	14	....	879		
Miscellaneous	1,265	....	17	....	1,282		
Total—							
Tests	15,272	355	5,258	....	20,885	15,775	32·4
Unit Values	115,601	2,796	35,208	....	153,605	97,261	57·9

Table IIF

VIROLOGY SECTION—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Commonwealth	Gairdner Hospital	Others			
							%
Preparation of Inocula	18,581	473	1,015	....	20,069	11,613	72·8
Tissue Culture	22,953	366	1,548	....	24,867	20,935	18·8
Egg Inoculation	1,139	....	....	....	1,139	980	16·2
Animal Inoculation	28,583	160	2,508	....	31,251	24,591	27·1
Neutralisation	47,752	394	7,310	....	55,456	40,388	37·3
Haemadsorption	7,082	148	498	...	7,728	10,992	....
Haemagglutination	20,109	232	52	....	20,393	9,408	116·8
Sterility Tests	....	....	....	....	Included maintenance	384	....
Complement Fixation	22,629	1,105	1,955	....	25,689	2,850	9 times
Others	9,819	58	256	....	10,133	29,040	....
Total—							
Tests	178,647	2,936	15,142	....	196,725	151,181	30·1
Unit Values	1,512,902	27,890	91,790	....	1,632,582	1,147,387	42·2

Table III
BIOCHEMISTRY DEPARTMENT—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Commonwealth	Gairdner Hospital	Others			
							%
Serum/Plasma Tests	89,914	6,956	207,091	27,707	331,668	304,346	9·0
C.S.F. Tests	25	11	478	45	559	275	103·3
Gastric Contents	3	....	1	3	7	13	....
Effusions	....	2	117	....	119	266	....
Urine Examinations	391	82	1,689	251	2,413	1,545	56·2
Metabolic Tests	43	12	347	54	456	452	0·9
Others	37	12	102	68	219	371	....
Total—							
Tests	90,413	7,075	209,825	28,128	335,441	307,268	9·2
Unit Values	872,531	71,362	1,883,382	271,627	3,098,902	2,783,864	11·3

Table IV
HAEMATOLOGY DEPARTMENT—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Gairdner Hospital	Others			
Red Cells—							%
Red Cell Count	2,462	19	6,411	97	8,989	1,072	More than 8 times
Haematocrit	3,117	413	13,486	881	17,897	10,293	73·9
Absolute Values	7,600	392	26,932	952	35,876	9,313	More than 3½ times
Sedimentation Rate	2,404	452	11,421	946	15,223	10,853	40·3
Film Examination	2,910	383	13,591	1,043	17,927	5,827	3 times
Fragility Tests	....	....	12	1	13	3	More than 4 times
Reticulocytes	18	12	1,169	14	1,213	1,458	....
Stipple Cells	....	....	....	1	1	1	....
Hb Levels	2,797	514	12,438	2,299	18,048	16,306	10·7
Platelets	41	36	2,028	49	2,154	2,397	....
White Cells—							
White Cell Count	2,714	457	12,181	1,119	16,471	11,890	38·5
Differential	2,247	417	10,153	975	13,792	11,060	24·7
LE Cells and Latex Cells	11	6	361	38	416	275	51·3
Direct Eosinophil Count	24	12	690	15	741	529	40·1
Blood Grouping—							
A.B.O.	2,764	108	1,541	2,059	6,472	6,250	3·6
Rhesus D	2,764	108	1,541	2,059	6,472	6,250	3·6
Antibody Screen and Titre	2,782	79	1,541	2,097	6,499	6,359	2·2
Compatibility	36	11	4,887	88	5,022	4,009	25·3
Genotype	81	31	1	70	183	52	3½ times
Folic Acid	380	224	308	321	1,233	660	86·8
Vitamin B12 Assay	300	236	316	248	1,100	735	50·0
Bone Marrow Examination	5	6	99	15	125	99	26·3
Plasma Viscosity	....	....	1	....	1	2	....
Clotting Tests and Studies—							
Bleeding Time	7	....	205	2	214	271	....
Clotting Time	14	5	1,866	3	1,888	788	2·4 times
Prothrombin Time	186	72	5,316	89	5,663	5,094	11·2
Kaolin Partial Thromboplastin Test	....	....	207	....	207	10	More than 20 times
Thrombin Clotting Time and Fibrinogen Titres	....	....	61	....	61	28	17·9
Platelet Aggregation Test	....	....	55	....	55	....	....
Fibrinolysis Tests	....	....	32	....	32	....	....
Other Coagulation Tests	....	....	448	....	448	63	More than 7 times
Anti Nuclear Factor	....	....	....	....	....	42	Included in Bio-chemistry
Others	53	10	193	61	317	332	....
Total—							
Tests	35,717	4,003	129,491	15,542	184,753	112,321	64·5
Units	146,589	24,854	479,910	80,438	731,791	494,421	48·0

TABLE V
RADIO-ISOTOPE SECTION—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Gairdner Hospital	Others			
							%
Thyroxine T4	1,161	307	1,532	1,467	4,467	2,822	58·3
Tri-Iodothyroxine T3	637	126	646	696	2,105	1,288	63·4
Cyanocobalamin B_{12}	263	136	192	167	758	1,078	....
Insulin	2,713	1	9	1	2,724	1,541	76·7
Schilling's Test	4	....	7	....	11	17	....
Red Cell Survival and Blood Volume Studies	6	3	3	....	12	3	4 times
Digoxin Assay	1	....	1	....	2	....	....
Total—							
Tests	4,785	573	2,390	2,331	10,079	6,749	49·3
Units	192,828	23,644	96,576	93,908	406,956	274,520	48·2

TABLE VIA
HISTOPATHOLOGY AND MORBID ANATOMY—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Gairdner Hospital	Others			
Autopsies—							%
Forensic	1,079	....	....	....	1,079	1,136	....
Others	19	1	135	....	155	120	39·2
Sections—							
Autopsy—Forensic	14,972	....	....	....	14,972	13,466	11·2
Autopsy—Others	496	22	2,264	....	2,782	3,148	....
Biopsy	3,718	1,390	3,962	6,207	15,277	13,388	14·1
Animals, Rodents	327	....	....	....	327	776	....
Miscellaneous	39	9	259	48	355	**	....
Special Staining	7,692	....	....	....	7,692	5,171	48·8
Frozen Sections	217	....	43	2	262	156	67·9
Immuno-fluorescent Antibodies	192	....	....	....	192	....	....
Total—							
Exam.	28,751	1,422	6,663	6,257	43,093	37,361	15·3
Units	635,355	21,515	124,920	93,855	875,645	792,775	10·5

** Included in Biopsy Sections.

TABLE VIB
CYTOLOGY—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Gairdner Hospital	Others			
							%
Slides	3,206	3,496	5,026	8,815	20,543	17,332	18·5
Units	48,090	52,440	75,390	132,225	308,145	259,980	18·5

	1971		1970		Increase 1971	
	No. of Cases	No. of Slides	No. of Cases	No. of Slides	Cases	Slides
					%	%
Lung Specimens	4,163	5,372	3,518	4,796	18·3	12·0
Cervical Specimens	4,997	12,186	4,331	10,029	15·4	21·5
Other Specimens	372	1,308	362	1,018	2·8	28·5
Special Slides	....	1,677	....	1,489	....	12·6
Total	9,532	20,543	8,211	17,332	16·1	18·5

TABLE VII
SEROLOGY DEPARTMENT—WORK DONE 1971

	Source				1971 Total	1970 Total	1971 Increase
	State	Common-wealth	Gairdner Hospital	Others			
							%
Treponemal Tests	51,972	2,517	1,372	....	55,861	50,792	10·0
Gonococcal Tests	5,512	463	153	....	6,128	5,540	10·6
Hydatid Tests	159	25	47	....	231	225	2·7
Bacterial Agglutinations	5,588	196	1,498	....	7,282	8,390	....
Rheumatic Tests	3,419	109	1,027	672	5,227	4,888	6·9
Leptospiral Tests	1,426	....	129	....	1,555	2,566	....
Viral, Rickettsial and Protozoal Tests	8,812	115	1,201	....	10,128	8,326	21·6
Hormone Tests	1,616	8	181	505	2,310	5,057	....
Medico-Legal Tests	5,428	....	....	....	5,428	2,755	97·0
Chromosome Studies	247	....	1	....	248	186	33·3
Others	439	11	187	....	637	205	More than 3 times
Total—							
Tests	84,618	3,444	5,796	1,177	95,035	88,930	6·9
Unit Values	563,370	20,794	45,215	15,310	644,689	590,186	9·2

Appendix III

Tuberculosis Control Branch

F. G. B. Edwards, B.A., LL.B.M.B., B.S., F.C.C.P., F.A.C.M.A:
Director

Incidence and Prevalence

The rise of 46,000 in the State mean population between 1970 and 1971, an increase of 4·7 per cent., was the largest recorded and took the total past the one million mark. In spite of this, and a continuing influx of new settlers from parts of the world where there is a high incidence of tuberculosis, there was a further slight fall in the number of cases notified. There was also a small reduction in the rate of pulmonary cases notified, from 11·5 to 11·0 per 100,000, although the absolute number remained unaltered at 113. However these figures included reactivations (12) and patients transferred from other States (12). 119 cases were diagnosed for the first time among those currently living in Western Australia, an incidence rate of 10·2 per 100,000 (12·5 per 100,000 in 1970), and of these only 95 had pulmonary disease, an incidence of 9·2 per 100,000 (9·4 in 1970).

The trend towards diagnosis of pulmonary tuberculosis at an earlier stage was reversed, relatively more cases not being discovered until being moderately advanced or advanced. Further analysis showed that this was largely due to an increase in the occurrence of acute pulmonary tuberculosis in old people admitted to hospital for other conditions, their tuberculosis being masked by degenerative and other diseases and only recognised at autopsy or on subsequent receipt of the results of sputum cultures for tubercle bacilli. Medical staff need to be aware of the possibility of unsuspected tuberculosis and to be on the alert if unnecessary delay in diagnosis is to be avoided.

The sex distribution among newly notified cases has also shown some change with a trend towards relatively more being diagnosed in females. The well marked higher incidence in older men which had become a noteable feature was much less obvious except in those aged 70 years or more.

There were 783 cases on the tubercolosis register at the end of the year, 625 of these being pulmonary (including pleural effusions), a "prevalence" rate of 76·1 per 100,000.

Mortality

Mortality rates have varied between 1·5 and 1·9 per 100,000 since 1965, the rate for 1971 being 1·8 (1·6 for pulmonary cases). In many instances of death attributed to tuberculosis under the rules of the international classification this disease was really only a secondary contributor. Thus true tuberculosis mortality remains at a very low level.

Reactivations

Twelve patients with a previously documented history of clinical tuberculosis developed active disease during the year but only one of these had completed an adequate course of treatment with antituberculosis drugs. Six had been treated before 1950 and had received no chemotherapy, 5 of them having had collapse therapy (artificial pneumothorax or thoracoplasty). Four patients treated in the early 1950's were given inadequate drug regimes and one other patient, treated in 1962, failed to complete a satisfactory course of chemotherapy through being unreliable.

Since 1964 there have been 125 reactivations but in only 8 (6·4 per cent.) had initial drug treatment been regarded as adequate. One third had never had antituberculosis drugs and the remaining patients (60 per cent.) had received inadequate treatment, 13 of these also having had surgery.

Tuberculosis in patients born outside Australia

23·7 per cent. of persons living in the State were born outside Australia but 52·7 per cent. of new and reactivated cases came from this group. Among male patients the ratio between the Australian born and the non-Australian born was 1:3·2 and for female patients the ratio 1:4·1. The United Kingdom and Italy, the two countries from which there is the greatest migrant intake, provided the largest number of cases of tuberculosis among the non-Australian born. There was also an appreciable incidence among those coming from non-European countries.

Routine examination of new arrivals was continued and there were 13,297 in 1971. 90 per cent. of those arriving attended a chest clinic as a result of receiving pamphlets at the point of disembarkation supplemented where necessary by a postal reminder. Since 1966 this system has resulted in the discovery of 24 cases of active pulmonary tuberculosis (a rate of 32·6 per 100,000, 2·4 times the general incidence rate) and of 325 persons with inactive or apparently inactive lesions requiring further observation.

Mass compulsory surveys

These were conducted at the following centres:—

Wandering
Narrogin
Kulin
Brookton
Cue
Kojonup
Woodanilling
Lake Grace
Port Hedland
Ashburton
Murchison
Trayning
Koorda
Stirling
Bassendean
Fremantle
Boddington
Pingelly
Kondinin
Beverley
Mt. Magnet
Broomehill
Katanning
Dumbleyung
Roebourne
Carnarvon
Yalgoo
Mukinbudin
Wyalkatchem
Bayswater
Melville
Mosman Park
Williams
Wickepin
Cuballing
Wiluna
Meekatharra
Gnowangerup
Nyabing-Pingrup
Wagin
Upper Gascoyne
Shark Bay
Nungarin
Mt. Marshall
Dowerin
Swan
East Fremantle

A total of 83,672 examinations was made but the yield of cases of tuberculosis remained very low, being 0·16 per 1,000 films. Anslysis of the results of mass x-ray surveys from 1964–1970 based on graphs for 3-year moving averages shows a continuing fall in the yield of cases of pulmonary tuberculosis and indicates that males aged 50 years or more comprise the only group likely to produce an incidence rate approaching even 0·5 per 1,000.

14·3 per cent. of new cases of pulmonary tuberculosis notified in 1971 were discovered as a result of mass compulsory surveys, an increase of 4·5 per cent. over the 1970. figure. During the previous five years the proportion of new cases diagnosed as a result of this activity varied between 18·8 per cent. (in 1966) and 8·1 per cent. (in 1969).

Resistant strains of mycobacteria

Resistant strains of M. tuberculosis continue to be isolated. Primary resistance to streptomycin was reported in 14 cases and in a few instances to various other drugs. In all these patients alternative drug regimes were used and a satisfactory response obtained. There were no patients with chronic positive disease due to M. tuberculosis. 11 cases with active pulmonary lesions caused by atypical mycobacteria continued to excrete these organisms but as yet there has been no evidence of person to person transmission of this type of disease.

Bed occupancy and domiciliary treatment

A further 20 beds at Claremont Hospital were released for general use by the Mental Health Services, leaving 10 beds available for tuberculosis. The total available tuberculosis beds in the state at the end of the year was 89, with an average daily bed occupancy of 48.

In view of the steep rise in the ascertained daily bed cost charged against tuberculosis funds for the treatment of patients in the Sir Charles Gairdner Hospital, tuberculosis beds in the hospital had to be used with the utmost economy. Investigations were completed as fully as possible on an out-patient basis before approval for admission was given. At the same time care was taken to ensure that patients with probable tuberculous lesions were not kept out of hospital unnecessarily and this applied particularly to recent arrivals from eastern countries with new soft shadows and positive tuberculin reactions.

Patients in country centres continued to present problems in management especially those originating from the North West and Kimberley areas. Decisions as to the necessity for admission as a tuberculosis patient often had to be made on the evidence of chest X-ray appearances and symptoms alone. On occasions the failure to detect acid fast bacilli on direct microscopy of sputum specimens obtained from patients with radiological cavitation suggested the possibility of lung abscess or bronchial carcinoma.

The duration of hospital stay was progressively shortened by the use of facilities for daily or intermittent domiciliary chemotherapy. In the metropolitan area and some South West centres treatment was supervised at chest clinics or by Silver Chain Nurses in the homes. In other parts of the State supervision of home treatment was carried out by Public Health Nurses who are playing an increasingly important role in this regard. Before taking up their posts these nurses receive some instruction in current methods of tuberculosis control including the technique of B.C.G. vaccination and tuberculin testing.

In spite of the improvements in facilities for the continuation of antituberculosis drug treatment on a domiciliary basis the management of the hard core of difficult patients remains a problem. For some of these supervision of oral drug treatment in the home was undertaken with some success but for others only a lengthy stay in hospital ensured satisfactory treatment.

Atypical mycobacterial diseases

The incidence of pulmonary lesions caused by atypical mycobacteria was the lowest since 1959, only 6 cases being reported. In 5 of these the responsible organism was identified as M. intracellulare and in the remaining one a scotochromogen. There were 12 children with mycobacterial adenitis recognised histologically. M. intracellulare was identified as the responsible organism in 3 and M. tuberculosis in 1 but in the remaining 8 no mycobacteria were recovered. In most of these the organisms were presumed to be atypical on the basis of previous experience and the results of differential tuberculin skin testing.

Since 1961 there have been 105 instances of mycobacterial gland infections in children. M. tuberculosis was recovered from only one of these, M. intracellulare being identified in 38 and scotochromogens in 12. No organisms were recovered in the remaining 54.

Remarks

The favourable trend in the situation with regard to tuberculosis control continues although improvements have been less dramatic in recent years. Tuberculin tests carried out in high school students during the year gave a reactor rate of 1·8 per cent. There is now a very low yield of cases from compulsory mass X-ray surveys and increasing reliance must be placed on clinical diagnosis and on the continued observation of individuals considered to be at special risk. A register of these is being compiled and includes persons with radiological abnormalities possibly related to tuberculosis, young persons with significantly positive tuberculin reactions and persons with a previous episode of tuberculosis. The continued relatively high incidence in the quarter of the population born outside Australia underlines the importance of maintaining a satisfactory screening of persons coming to settle in this country, especially with the liberalization of the immigration policy. Domiciliary continuation of antituberculosis drug treatment is being used increasingly but the ensuring of adequate treatment in each case remains a problem. Although modern antituberculosis drug therapy is so successful there is still a small continuing incidence of reactivation in patients who have had adequate treatment and a larger incidence in those who have failed to co-operate. There was also a small incidence of resistant organisms but these did not present any major difficulties in treatment owing to the number of effective antituberculosis drugs now available.

TUBERCULOSIS—MAIN STATISTICAL FIGURES

Year	Mean Population 1,000s	Notifications				No. on Register (Pulm.) at 31st Dec.	No. on Register per 100,000 (Pulm.)	Number Receiving T.B. Allowance at 31st Dec.	Deaths			Death Rate per 100,000	
		Pulm. (incl. Pleural effus.)	Non-Pulm.	Total	Pulm. per 100,000				Pulm.	Non-Pulm.	Total	Pulm.	All Forms
1950	558	586	18	604	104·8	2,100	376	515	125	3	128	22·4	22·9
1951	580	467	37	504	80·4	2,402	413	474	76	6	82	13·1	14·1
1952	601	508	49	557	84·5	2,574	428	396	75	7	82	12·5	13·6
1953	621	378	34	412	60.6	2,762	445	361	43	3	46	6·9	7·4
1954	640	348	34	382	54·3	2,769	432	326	57	4	61	8·9	9·5
1955	659	413	39	452	62·7	2,965	450	330	31	2	33	4·7	5·0
1956	677	424	44	468	62·6	2,900	428	264	43	3	46	6·3	6·8
1957	692	332	32	364	47·9	2,786	403	198	36	1	37	5·2	5·3
1958	706	355	24	379	50·3	2,726	386	213	22	4	26	3·1	3·4
1959	726	320	34	354	44·1	2,684	369	182	24	....	24	3·3	3·3
1960	731	296	34	330	40·5	2,388	327	148	29	1	30	4·0	4·1
1961	737	209	41	250	28·4	1,349	183	89	18	1	19	2·4	2·6
1962	755	243	25	268	32·2	1,333	177	90	24	4	28	3·2	3·7
1963	773	216	28	244	27·9	1,218	158	92	13	....	13	1·7	1·7
1964	790	176	32	208	22·3	1,221	154	88	20	....	20	2·5	2·5
1965	806	153	25	178	19·0	919	114	65	12	....	12	1·5	1·5
1966	836	134	36	170	16·0	840	100	64	16	....	16	1·9	1·9
1967	877	137	34	171	15·6	814	93	54	9	....	9	1·0	1·0
1968	910	145	37	182	15·9	680	75	44	8	1	9	0·9	1·0
1969	947	133	27	160	14·0	659	70	43	8	....	8	0·8	0·8
1970	983	113	35	148	11·5	653	67	32	10	....	10	1·0	1·0
1971	1,029	113	30	143	11·0	625	61	27	17	2	19	1·6	1·8

ANNUAL NOTIFICATIONS OF PULMONARY TUBERCULOSIS SHOWING STAGE OF DISEASE*

Year	Parenchymal Disease						Pleural Effusion		Total
	Minimal		Moderately Advanced		Advanced				
		%		%		%		%	
1952	122	24·0	275	54·1	101	19·9	10	2·0	508
1953	98	25·9	210	55·5	65	17·2	5	1·4	378
1954	96	27·6	178	51·1	74	21·3	....	....	348
1955	111	26·9	225	54·5	64	15·5	13	3·1	413
1956	127	38·0	217	51·1	72	17·0	8	1·9	424
1957	102	30·7	163	49·1	61	18·4	6	1·8	332
1958	91	25·6	187	52·7	72	20·3	5	1·4	355
1959	103	32·2	151	47·2	55	17·2	11	3·4	320
1960	89	30·1	144	48·6	49	16·6	14	4·7	296
1961	90	43·1	73	34·9	34	16·3	12	5·7	209
1962	117	48·1	84	34·6	36	14·8	6	2·5	243
1963	99	45·8	89	41·2	26	12·0	2	1·0	216
1964	71	40·3	81	46·0	23	13·1	1	0·6	176
1965	75	49·0	60	39·2	17	11·1	1	0·7	153
1966	59	44·0	54	40·3	18	13·4	3	2·2	134
1967	56	40·9	59	43·1	20	14·6	2	1·4	137
1968	71	48·9	59	40·7	11	7·6	4	2·8	145
1969	57	42·9	62	46·6	13	9·8	1	0·7	133
1970	51	45·1	47	41·6	10	8·9	5	4·4	113
1971	42	37·2	52	46·0	17	15·0	2	1·8	113

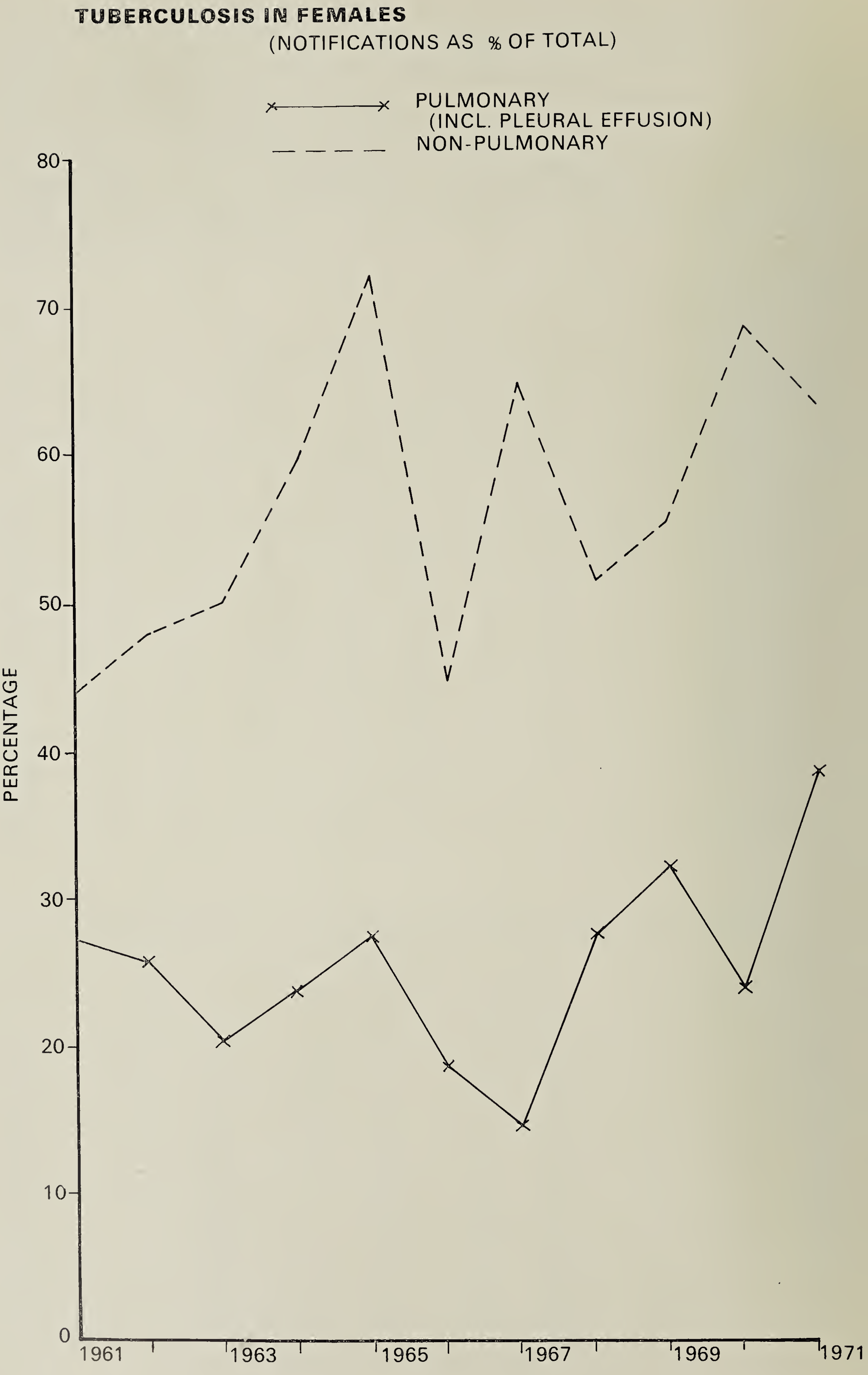
*Classified according to Diagnostic Standards N.T.A.

TUBERCULOSIS NOTIFICATIONS FOR YEAR ENDED 31st DECEMBER, 1971

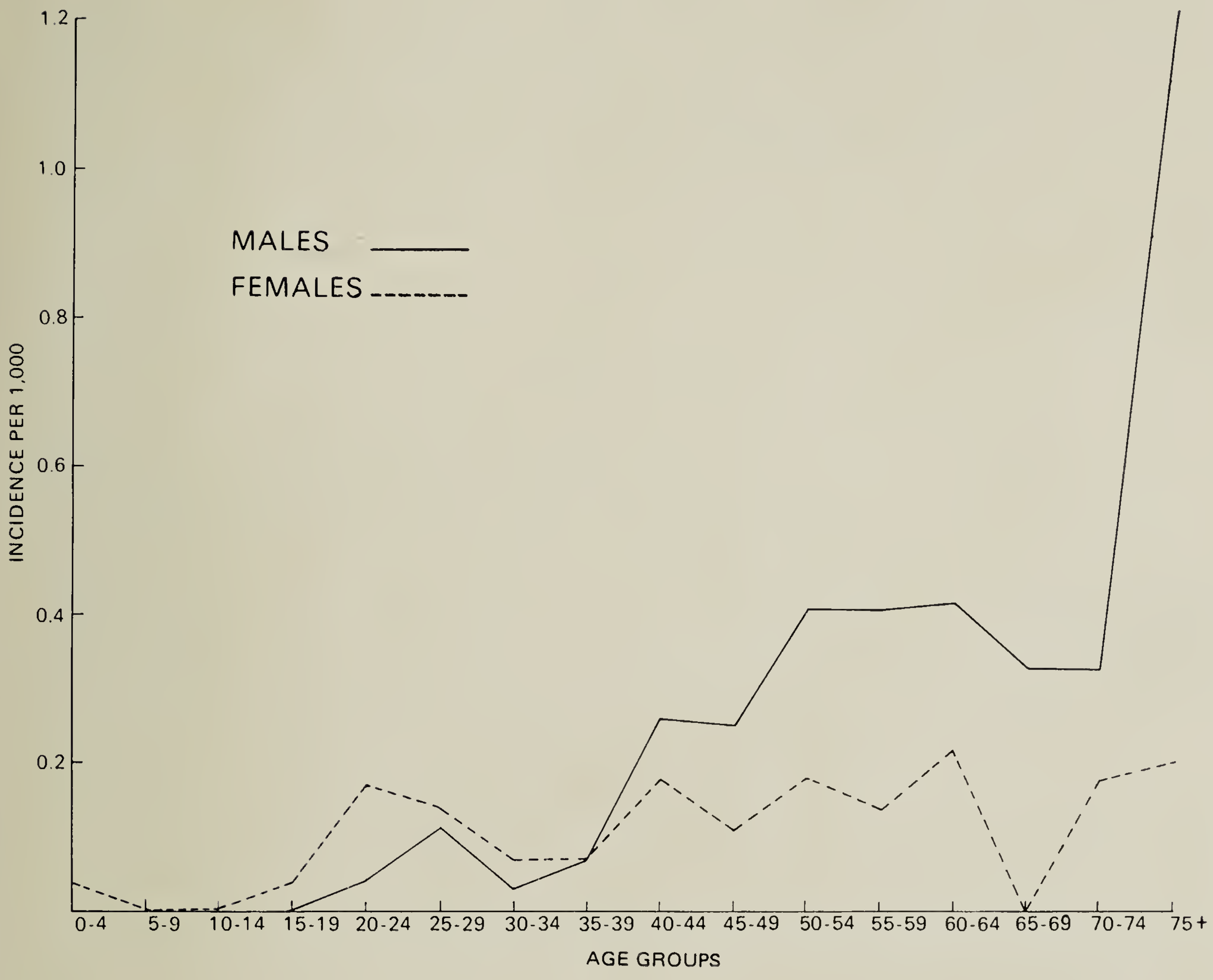
Showing Age, Sex, Form and Stage of Disease

Age Group	Males					Females					Persons					Total
	Pulmonary			Non. Pulm.	Pleur. Effus.	Pulmonary			Non. Pulm.	Pleur. Effus.	Pulmonary			Non. Pulm.	Pleur. Effus.	
	Min.	Mod. Adv.	Adv.			Min.	Mod. Adv.	Adv.			Min.	Mod. Adv.	Adv.			
0– 4	....	....	....	3	....	1*	....	1	2	....	1*	....	1	5	....	7
5– 9	....	....	....	1	....	....	....	....	2	....	....	....	....	3	....	3
10–14	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15–19	....	....	....	....	....	2	....	....	....	....	2	....	....	....	....	2
20–24	....	2	....	1	....	5	....	1	....	1	5	2	1	1	1	10
25–29	3	1	....	....	....	2	2	1	3	....	5	3	1	3	....	12
30–34	....	1	....	1	....	2	....	....	3	....	2	1	....	4	....	7
35–39	1	1	....	1	....	....	2	....	....	....	1	3	....	1	....	5
40–44	2	2	3	1	1	2	3	....	2	....	4	5	3	3	1	16
45–49	5	2	....	1	....	1	2	....	1	....	6	4	....	2	....	12
50–54	3	6	....	1	....	1	2	1	....	....	4	8	1	1	....	14
55–59	2	6	1	....	....	2	1	....	1	....	4	7	1	1	....	13
60–64	1	6	1	....	....	2	2	....	1	....	3	8	1	1	....	13
65–69	1	1	3	....	....	....	....	....	1	....	1	1	3	1	....	6
70–74	....	1	2	1	....	....	2	....	1	....	....	3	2	2	....	7
75 and over	4	5	2	....	....	....	2	1	2	....	4	7	3	2	....	16
Total	22	34	12	11	1	20	18	5	19	1	42	52	17	30	2	143

* Primary Case.


TUBERCULOSIS IN FEMALES
(NOTIFICATIONS AS % OF TOTAL)
PULMONARY
(INCL. PLEURAL EFFUSION)
NON-PULMONARY
PERCENTAGE
80
70
60
50
40
30
20
10
0
1961
1963
1965
1967
1969
1971

GRAPH SHOWING THE INCIDENCE PER 1,000 IN AGE GROUPS FOR PULMONARY TUBERCULOSIS IN 1971



ANALYSIS OF REGISTER AS AT 31st DECEMBER, 1971

A. Pulmonary Tuberculosis
(excluding Pleural Effusions)

Activity	Number on Register According to Original Extent of Lesions			Total
	Minimal	Moderate	Advanced	
Active	70	87	15	172
Inactive—				
0–1 year	4	1	....	5
1–2 years	27	20	4	51
2–3 years	35	45	6	86
3–4 years	41	35	4	80
4–5 years	41	30	8	79
5+ years	66	60	13	139
	284	278	50	612

B. Pleural Effusion	13
C. Non-Pulmonary Tuberculosis	158
Total All Forms	783

REACTIVATIONS

Previous Treatment	Number of Reactivations								Total for 8 Years
	1964	1965	1966	1967	1968	1969	1970	1971	
(1) No chemotherapy	8	6	5	4	4	7	2	6	42
(2) Inadequate chemotherapy—									
Without Surgery	13	5	13	5	4	11	6	5	62
With Surgery	5	2	1	4	1	...	....	....	13
(3) Apparently adequate chemotherapy	....	2	....	....	....	2	3	1	8
Total	26	15	19	13	9	20	11	12	125

WESTERN AUSTRALIA : TUBERCULOSIS INCIDENCE BY COUNTRY OF BIRTH, 1961–1971 : MALES

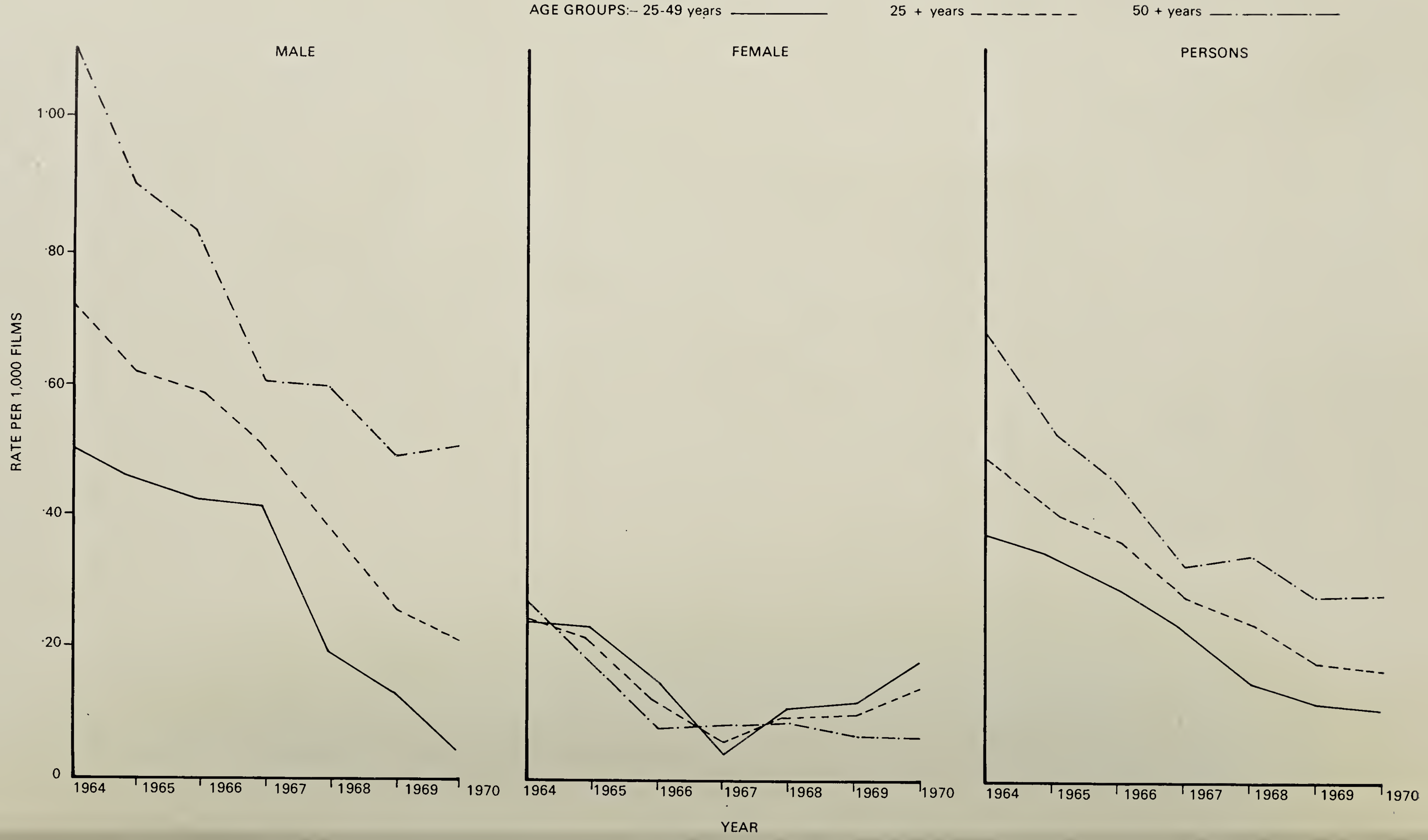
Country of Birth	Population at 30th June. 1966 Thousands (Census)	Incidence per Thousand Persons											Total Notifications 9611–1971
		1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
U.K. and Republic of Ireland	54·9	0·92	0·93	0·66	0·67	0·61	0·59	0·53	0·36	0·33	0·51	0·31	306
Germany	2·9	0·74	0·37	....	....	....	0·75	....	0·34	0·34	0·34	0·69	10
Greece	3·1	0·87	0·87	0·43	....	....	....	0·65	0·32	0·32	0·32	....	10
Italy	16·0	1·01	0·91	0·70	0·60	0·47	0·20	0·50	0·25	0·44	0·37	0·44	91
Netherlands	5·8	0·16	0·64	0·31	....	0·16	0·16	0·17	0·17	....	....	0·17	13
Poland	2·8	2·50	0·33	1·85	1·07	....	0·71	1·43	1·78	0·71	....	0·36	30
Yugoslavia	4·6	1·39	1·08	1·58	1·11	1·11	1·94	0·43	0·87	2·00	0·65	0·43	50
Other European	6·5	1·40	1·05	0·70	1·05	0·70	1·40	1·08	0·77	1·23	0·92	....	62
Other Birthplaces	11·8	0·86	1·09	1·19	0·74	1·23	0·61	0·68	1·52	0·51	1·27	0·93	105
Total non-Australian born	108·4	0·97	0·89	0·74	0·64	0·58	0·59	0·56	0·54	0·49	0·55	0·38	677
Australian-born	318·2	0·30	0·37	0·34	0·31	0·22	0·26	0·20	0·19	0·15	0·12	0·12	789

WESTERN AUSTRALIA : TUBERCULOSIS INCIDENCE BY COUNTRY OF BIRTH, 1961–1971 : FEMALES

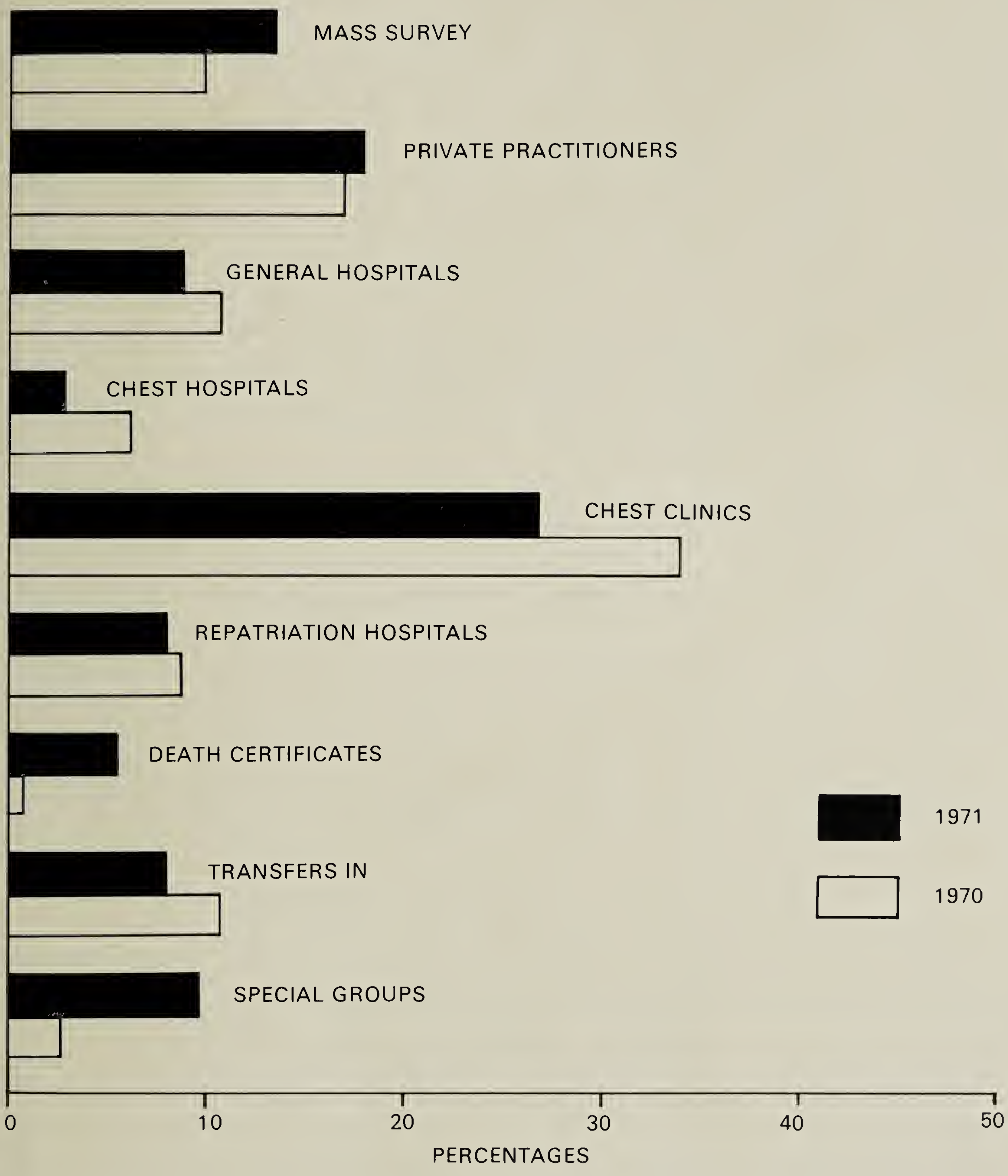
Country of Birth	Population at June 30, 1966 Thousands (Census)	Incidence per Thousand Persons											Total Notifications 1961–1971
		1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
U.K. and Republic of Ireland	49·2	0·23	0·29	0·31	0·26	0·36	0·15	0·18	0·18	0·12	0·14	0·20	103
Germany	3·0	0·34	....	0·34	....	....	0·34	....	....	....	0·33	0·33	5
Greece	2·3	0·55	0·52	0·50	1·11	....	....	0·43	....	0·43	....	....	7
Italy	12·1	0·68	0·27	0·26	0·09	0·58	0·29	0·08	0·08	0·33	0·08	0·41	35
Netherlands	4·6	....	0·39	....	....	....	....	....	....	....	....	0·22	3
Poland	2·0	0·53	0·56	....	2·10	....	....	....	1·00	2·00	....	1·00	14
Yugoslavia	2·9	....	1·67	1·60	....	0·43	....	0·34	....	....	....	0·34	11
Other European	4·4	0·75	0·73	....	0·25	0·75	0·75	0·68	0·45	0·68	0·45	....	23
Other Birthplaces	9·8	0·45	0·29	0·14	0·45	0·15	0·15	0·20	0·82	0·51	0·61	1·33	45
Total non-Australlian born	90·3	0·34	0·36	0·29	0·28	0·34	0·19	0·19	0·24	0·25	0·19	0·37	246
Australian-born	319·7	0·16	0·16	0·13	0·14	0·12	0·09	0·08	0·12	0·11	0·11	0·09	391

W.A. MASS COMPULSORY SURVEY

YIELD OF T.B. CASES 1963-1971 : 3 YEAR MOVING AVERAGE



GRAPH SHOWING THE SOURCE OF NOTIFICATION OF CASES OF PULMONARY TUBERCULOSIS AS A PERCENTAGE OF TOTAL NOTIFICATIONS



PATIENTS NOTIFIED WITH ATYPICAL TUBERCULOSIS

(including reactivations)

Year	Runyon Group I	Runyon Group II			Runyon Group III (M. intracellulare)		
	Pulm.	Pulm.	Lymph Nodes	Total	Pulm.	Lymph Nodes	Total
1955	....	....	....	....	1	....	1
1956	....	....	....	....	1	....	1
1957	....	....	....	....	1	....	1
1958	....	....	....	....	4	1	5
1959	....	....	....	....	10	2	12
1960	....	1	....	1	11	1	12
1961	....	2	....	2	11	1	12
1962	....	1	3	4	8	2	10
1963	....	3	....	3	17	3	20
1964	....	6	....	6	14	3	17
1965	2	2	....	2	13	1	14
1966	2	3	2	5	7	6	13
1967	1	4	1	5	6	3	9
1968	....	6	2	8	5	9	14
1969	1	....	1	1	10	5	15
1970	3	2	3	5	11	3	14
1971	....	1	....	1	5	3	8
Total	9	31	12	43	135	43	178

Plus : One patient with Group IV pulmonary disease in 1960.
One patient with Mixed Groups I and III pulmonary disease in 1963.
One patient with Group II disease of joint in 1968.
One patient with Group II and III pulmonary disease n 1970.

PATIENTS FROM WHOM ATYPICAL MYCOBACTERIA WERE ISOLATED (FOR THE FIRST TIME) IN 1971

Runyon Group	Casual Isolations	Persistent Isolations			Total
		Atypical Tuberculosis			
		Pulm.	Non-Pulm.	Total	
I	....	....	....	....	....
II	2	....	....	....	2
III	39	3	4	7	53
IV	9	....	....	....	9
Total Patients	50	3	4	7	64

MYCOBACTERIAL DISEASE OF LYMPH NODES IN CHILDREN

Year	Runyon Group II Organisms Identified	Runyon Group III Organisms Identified	M. TB (Human) Identified	Cultures Negative	Total Cases
1961	....	1	....	1	2
1962	3	2	....	2	7
1963	....	3	....	8	11
1964	....	3	1	4	8
1965	....	1	....	5	6
1966	2	6	....	7	15
1967	1	3	....	9	13
1968	2	9	....	5	16
1969	1	5	....	5	11
1970	3	2	....	5	10
1971	....	3	....	3	6
Total number of children	12	38	1	54	105

Appendix
Western Australia
Pulmonary Tuberculosis

Year	Population in 1,000s	Notifications Received	Incidence Rate per 100,000 Population	Deaths Registered	Mortality Rate per 100,000 Population
1911	287	259	90·2	190	66·2
1912	301	429	142·5	220	73·1
1913	313	424	135·5	206	65·8
1914	323	353	109·3	229	70·9
1915	321	336	104·7	233	72·6
1916	313	511	163·5	225	71·9
1917	306	464	151·6	217	70·9
1918	308	432	140·5	245	79·5
1919	320	467	145·9	289	91·6
1920	330	442	139·9	259	78·4
1921	334	424	126·9	277	82·9
1922	341	387	113·8	256	75·1
1923	351	361	102·8	216	61·5
1924	363	381	104·6	228	62·8
1925	373	403	108·4	259	69·4
1926	381	415	108·2	252	66·1
1927	392	409	104·3	231	56·4
1928	408	395	96·8	282	69·1
1929	421	400	95·0	245	53·4
1930	429	569	132·6	218	50·8
1931	432	372	86·1	223	51·6
1932	435	339	77·9	203	46·7
1933	439	295	67·2	207	47·2
1934	442	287	64·9	218	49·3
1935	447	270	60·4	210	47·0
1936	452	338	74·8	193	42·7
1937	457	239	53·0	172	37·6
1938	464	247	53·2	177	38·1
1939	470	202	43·0	179	38·1
1940	473	231	48·8	181	38·3
1941	474	154	32·5	185	39·0
1942	477	113	23·7	175	36·7
1943	477	273	57·3	144	30·2
1944	481	219	45·4	134	27·9
1945	488	271	55·5	149	30·5
1946	493	343	69·6	163	33·1
1947	502	372	74·0	128	25·4
1948	515	325	63·1	157	30·5
1949	533	499	93·6	123	23·1
1950	558	586	104·8	129	23·1
DEATH CLASSIFICATIONS ACCORDING TO 6th (1948) INTERNATIONAL LIST					
1950	558	586	104·8	125	22·4
1951	580	467	80·4	76	13·1
1952	601	508	84·5	75	12·5
1953	621	378	60·6	43	6·9
1954	640	348	54·3	57	8·9
1955	659	413	62·7	31	4·7
1956	677	424	62·6	43	6·3
1957	692	332	47·9	36	5·2
1958	706	355	50·3	22	3·1
1959	726	320	44·1	24	3·3
1960	731	296	40·5	29	4·0
1961	737	209	28·4	18	2·4
1962	755	243	32·2	24	3·2
1963	773	216	27·9	13	1·7
1964	790	176	22·3	20	2·5
1965	806	153	19·0	12	1·5
1966	836	134	16·0	16	1·9
1967	877	137	15·6	9	1·0
1968	910	145	15·9	8	0·9
1969	947	133	14·0	8	0·8
1970	983	113	11·5	10	1·0
1971	1,029	113	11·0	17	1·6

Appendix IV

Epidemiology and Special Services

Dr. R. Allen, M.B., B.S., Senior Medical Officer

Infectious disease notifications during 1971 centred around the intestinal group of diseases. Salmonella infections and the icteric form of Infective Hepatitis increased by 47 per cent. and 75 per cent. respectively over the corresponding notifications for 1970. Cases of Bacillary Dysentery, however, after a steep rise in 1970, decreased by 42 per cent. to 149 cases this year. It is worthy of note that of these 149 cases, 76·5 per cent. occurred in country areas.

The report of a proven case of diphtheria in an unimmunised child serves as proof that carriers of this disease are still at large in the community.

1971 saw the commencement of a rubella vaccination campaign in secondary schools. During the first and second terms all High Schools and Colleges in the Southern half of the State were visited by a Departmental Mobile Immunisation Clinic. Rubella vaccination was offered to all first year girls under the age of 14 years who had obtained parental approval.

Acceptance of the new vaccine was high, and proved popular even among the girls themselves, as it caused no stinging, pain, or after effects.

In the metropolitan area, 5,283 girls were vaccinated out of a possible 7,104 .... = 74·4 per cent.
In country areas, 1,944 girls were vaccinated out of a possible 2,491 .... = 78·1 per cent.
TOTAL—7,227 girls were vaccinated out of a possible 9,595.... .... = 75·3 per cent.

These figures do not include Bunbury, where the campaign was organised locally, as was the case in many centres in the North West and Kimberleys.

The 75 per cent. acceptance rate is considered very satisfactory, as many of the remaining 25 per cent. stated that they had suffered from rubella at a younger age.

It is intended that this campaign will be repeated annually so that in years to some, the tragedies associated with congenital rubella infants may be a thing of the past.

During the year assistance was given with the administration of Gamma Globulin to the staff and inmates of a metropolitan institution to arrest the potential spread of an outbreak of infective hepatitis.

Late in the year a Special Treatment Clinic was established, under the direction of a full-time venereologist, as part of a planned programme to deal with the increasing incidence of venereal disease in this State.

IMMUNISATION

A. *Poliomyelitis*

111,232 doses of Sabin Oral Poliomyelitis Vaccine were administered during 1971, an increase of 39·1 per cent. over 1970.

B. *Other Diseases*

42,254 injections against diseases other than poliomyelitis were given during the year. Such diseases include diphtheria, tetanus, whooping cough, smallpox, measles and rubella. This represents an increase of 85·1 per cent, over the figure for 1970. The large increase over a twelve month period may be attributed to periodic publicity in the Press, and the commencement of the rubella vaccination campaign in schools. The increased numbers attending some Clinics, although gratifying, have imposed a heavy work load on Clinic staff, and have necessitated a rearrangement of some schedules to allow for extra time in these areas.

MALARIA

Nineteen cases of malaria were notified in Western Australia during 1971. All were investigated, and in each case were found to have originated from overseas. Nine of the cases originated from New Guinea, three from Indonesia, two from Burma, and one each from Manus Island, Vietnam, Solomon Islands, Nigeria and Malaysia.

TRACHOMA

Trachoma activity remains low, although there was a slight overall increase in percentage activity, as the areas visited by the Field Teams included those districts which are usually more heavily infected.

ANALYSIS OF SABIN VACCINE DOSES
1st June, 1967—31st December, 1971

Age Group	1st Dose	2nd Dose	3rd Dose	Total
0– 4 years	122,867	103,451	91,949	318,267
5– 9 years	91,627	84,164	77,855	253,646
10–14 years	88,059	83,839	78,575	250,473
15–19 years	29,318	27,220	24,709	81,247
Total—				
0–19 years	331,871	298,674	273,088	903,633
20 years and over	69,556	53,370	42,714	165,640
Grand Total	401,427	352,044	315,802	1,069,273

DOSES OF SABIN VACCINE ADMINISTERED ANNUALLY

Year	No. of Doses Administered
1967	379,550
1968	374,749
1969	123,765
1970	79,977
1971	111,232
Total	1,069,273

TRACHOMA ACTIVITY 1971

Area	0–4 Years			5–9 Years			10–14 Years			Over 15 Years			Total		
	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.
1. Central Agricultural	178	117	65·7	272	114	41·9	129	19	14·7	....	....	....	579	250	43·2
2. Northern Agricultural	161	86	53·4	266	103	38·7	115	7	6·1	....	....	....	542	196	36·1
3. Murchison	168	98	58·3	344	163	47·4	236	66	28·0	22	2	9·1	770	329	42·7
4. Eastern Goldfields	259	112	43·2	352	109	31·0	211	34	16·1	161	2	1·2	983	257	26·1
Total	766	413	53·9	1,234	489	39·6	691	126	18·2	183	4	2·2	2,874	1,032	35·9

TRACHOMA ACTIVITY, 1962–1971

Year	0–4 Years			5–9 Years			10–14 Years			Over 15 Years			Total		
	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.	Ex.	Act.	% Act.
1962	1,422	1,159	81·5	1,728	1,194	69·1	1,209	457	37·8	845	146	17·3	5,204	2,956	56·8
1963	718	493	68·7	679	405	59·6	414	114	27·5	192	15	7·8	2,003	1,027	51·3
1964	843	542	64·3	878	471	53·6	674	114	21·4	589	15	2·5	2,983	1,172	39·3
1965	1,073	675	62·9	1,199	534	44·5	869	122	14·0	113	1	0·9	3,254	1,332	40·9
1966	922	550	59.7	1,088	405	37·2	785	134	17·1	219	3	1·4	3,014	1,092	36·2
1967	372	205	55·1	465	138	29·7	295	28	9·5	28	....	....	1,160	371	32·0
1968	467	248	53·1	633	287	45·3	536	160	29·9	143	12	8·4	1,779	707	39·7
1969	843	387	45·9	956	247	25·8	662	55	8·3	48	....	....	2,509	689	27·5
1970	798	397	49·7	1,065	338	31·7	705	93	13·2	160	2	1·3	2,728	830	30·4
1971	766	413	53·9	1,234	489	39·6	691	126	18·2	183	4	2·2	2,874	1,032	35·9

Appendix V

Special Treatment Clinic

W.A. Newnham M.B., B.S. Venereologist

Prior to 8th November, 1971, the venereal disease control activities of the Department were divided between a Special Treatment Clinic (providing 4 sessions a week) at the Royal Perth Hospital and statistical and contact tracing commitments undertaken by the Epidemiology Branch.

The Clinic which was conducted in a basement at the Royal Perth Hospital was inadequate to cope with the increasing demand and an alternative site for a new clinic had to be explored. Further, the staff of 1 part-time medical officer, 1 part-time sister, and a clinic attendant was insufficient to meet requirements. For these reasons the clinic was re-located at 69 Moore Street in a renovated cottage with a new prefabricated building erected alongside of it ; while the staff was augmented to comprise a full-time venereologist, a part-time venereologist, 2 full-time Public Health nurses, a field officer and a clinic attendant. At the same time all venereal disease control activities were centralised in the new premises. The task allotted to the re-organised unit is as follows :—

1. To increase public facilities for the diagnosis and treatment of V.D. in collaboration with the Royal Perth Hospital.
2. To intensify the search for sources of infection and arrange for these to be brought under treatment.
3. To co-ordinate V.D. control activities throughout the State.

The newly established unit represents a joint venture between the Department and Royal Perth Hospital ; the Clinic functioning as one of the Hospital's out-patients' services, while at the same time serving the purpose of an administrative centre for statewide V.D. control. It is gratifying to record the co-operation and assistance that has been forthcoming from the Hospital authorities and the ease with which several minor problems involved in establishing the new unit have been overcome.

Relevant statistics for 1971 are presented herewith (together with comparable records for the previous 10 years) ; and these show not only an increase in the total number of V.D. notifications recorded, but a most disturbing increase in the incidence of syphilis. Every effort will be made during the forthcoming year to attack the general problem with special reference to curtailing the prevalence of syphilis.

VENEREAL DISEASE—W.A.

1962–1971

Year	Gonorrhoea	Syphilis	Granuloma	Chancroid	Total Venereal Disease
1962	283	16	....	....	299
1963	362	28	....	....	390
1964	392	11	....	....	403
1965	453	9	....	....	462
1966	690	20	....	....	710
1967	796	41	....	2	839
1968	718	60	1	....	779
1969	817	209	....	2	1,028
1970	1,166	159	3	....	1,328
1971	1,236	254	2	1	1,493

VENEREAL DISEASE—W.A. 1962–1971

AGE DISTRIBUTION

Year	15–19 Years	20–24 Years	25–29 Years	30–34 Years	Over 35 Years	Age Not Stated
	%	%	%	%	%	%
1962	18	32	15	11	20	4
1963	24	30	13	11	21	1
1964	26	30	15	9	18	2
1965	23	31	17	10	16	3
1966	20	31	18	11	15	5
1967	24	25	16	12	20	3
1968	21	31	15	9	19	4
1969	20	27	17	13	21	2
1970	19	29	19	12	19	1
1971	23·91	29·74	18·00	10·78	17·34	·20

VENEREAL DISEASE—W.A., 1967–1971

SEX DISTRIBUTION

Disease	Male					Female					Total				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Syphilis—															
Primary	24	32	140	77	119	5	14	35	54	72	29	46	175	131	191
Secondary	8	8	20	14	25	2	4	11	9	25	10	12	31	23	50
Tertiary	....	2	....	....	5	2	....	1	3	6	2	2	1	3	11
Congenital	....	....	2	1	1	....	....	....	1	1	....	....	2	2	2
Total Syphilis	32	42	162	92	150	9	18	47	67	104	41	60	209	159	254
Gonorrhoea	662	611	695	954	956	134	107	122	212	280	796	718	817	1,166	1,236
Granuloma	....	1	....	2	2	....	....	....	1	....	....	1	....	3	2
Chancroid	2	....	1	....	1	....	....	1	....	....	2	....	2	....	1
Total Venereal Disease	696	654	858	1,048	1,109	143	125	170	280	384	839	779	1,028	1,328	1,493

VENEREAL DISEASE—W.A., 1962–1971

AGE AND SEX DISTRIBUTION

A. MALES

Year	15–19 Years	20–24 Years	25–29 Years	30–34 Years	Over 35 Years	Age Not Stated	Total
1962	32	82	35	26	48	11	234
1963	64	94	43	29	59	8	297
1964	70	98	57	33	63	12	333
1965	73	118	73	44	62	13	383
1966	101	205	113	67	96	33	615
1967	138	184	115	84	152	23	696
1968	112	215	107	59	137	24	654
1969	132	243	161	121	181	20	858
1970	163	321	219	140	192	11	1,046
1971	207	357	221	132	194	3	1,114

B. FEMALES

Year	15–19 Years	20–24 Years	25–29 Years	30–34 Years	Over 35 Years	Age Not Stated	Total
1962	23	14	9	6	13	....	65
1963	27	23	8	12	18	5	93
1964	32	19	7	2	10	....	70
1965	33	20	8	1	16	1	79
1966	39	16	12	11	14	3	95
1967	62	28	21	14	15	3	143
1968	54	28	12	12	14	5	125
1969	77	34	15	8	33	3	170
1970	89	61	38	25	60	6	279
1971	150	87	48	29	65	....	379

Appendix VI

Hansens Disease Control

R. M. Spargo M.B., B.S. - Medical Officer

Surveys

The area covered in 1971 included the Kimberley, Pilbara and Ashburton. The greater part of the surveys was conducted by road thus allowing the Doctor to spend more time in stock camps and to gain access to places lacking aircraft landing facilities. The Public Health Field Nurses attended the surveys in their relevant areas.

Difficulty was experienced in surveying individuals who avoided presenting themselves at the appointed times. In the majority of cases these individuals eventually did present as a result of peer pressure. Particular difficulty was experienced with susceptible ethnic groups living in higher socio-economic circumstances.

Surveys were conducted in :—

1. All towns north of Onslow excluding Mining Company Towns.
2. All Aboriginal Reserves in the areas noted.
3. All Missions including Jigalong.
4. The majority of stations in the Kimberley. Those missed will be surveyed early in 1972.
5. All schools north of Onslow excluding the new Mining Towns. It is pointed out that the statistics given do not include :—
   - (i) children on correspondence
   - (ii) Aboriginal children not attending any school.

   These children are included in the Station statistics.

Distribution of Hansen's Disease

It appears that Hansen's Disease is becoming confined to the high rainfall coastal areas from Kununurra to La Grange with small foci at Port Hedland and Onslow and three inland foci in the Kimberley. This situation is probably not static because of the effects of increased Aboriginal migration resulting from the advent of the Federal Pastoral Award.

There is very little overt signs of Hansen's Disease in the Pilbara and Ashburton, apart from the known cases from the Port Hedland area and one case from Jigalong.

Jigalong is on an Aboriginal migration route between Wiluna and La Grange. There is also a steady interchange of persons across the W.A./N.T. border.

Surveillance and Outpatient Treatment

The surveillance of patients discharged from the Derby Leprosarium was continued in 1971 with increasing effectiveness. However, there were problems with surveillance in various localities, due to changes among the Public Health Sisters and, in addition, changes in Medical Officers rostered on R.F.D.S. Clinic Flights.

The frequent movement of patients from the locality to which they were initially discharged posed a problem. It was solved by alerting all Public Health Sisters of discharged patients, and in addition, with a bi-weekly Public Health Sisters schedule on R.F.D.S. radio-network. The obvious ethico-legal difficulties here will be fully overcome in 1972 with a Single Side Band (S.S.B.) link-up of Community Health Services, using a private frequency.

Specifically, the patients who may escape surveillance are those discharged to stations not currently under the care of a Public Health Sister. Often when the period of discharge pension lapses and the patient is able to work, the patients are often out in stock camps and not brought to the airstrip by station personnel on the R.F.D.S. Clinic day.

Although a patient is discharged to surveillance, in no way can it be guaranteed that that patient will continue to take his tablets regularly, even after sometimes years of supervision in the Leprosarium.

The situation improves when discharged to areas supervised by a Public Health Sister.

Acedapsone D.A.D.D.S. as a routine out-patient maintenance drug, would put out-patient chemo-therapy on a sure footing, as it would be certain that the chemo-therapy had been administered. It needs to be ensured that such low levels of serum D.D.S. produced with acedapsone will not produce D.D.S. resistant strains of M. Leprae.

Prophylactic chemo-therapy with D.P.T. Ciba 1906, is more certain as in the vast majority, such patients are in the towns, Missions or in institutions where the necessary supervision is at hand.

Prophylactic Measures

1. *B.C.G. Vaccination*

   This continues in the Kimberley for all new-born of the susceptible ethnic groups. In the majority of cases, it is given at 72 hours after birth.

   As reported last year, a series of Mantoux tests done on a number of infants admitted to the Children's Ward showed that they had failed to convert their Mantoux reaction. Consideration is being given to withholding B.C.G. Vaccination until the infant has acquired greater immunological maturity at the age of three months.

2. *Prophylactic Treatment of Tender Peripheral Nerves*

   This is an important Public Health measure. On several occasions now, ulnar neuritis without any associated neuropathy was seen. These patients had been started on a prophylactic regime of D.P.T. Ciba 1906 but for certain reasons, the prescribed treatment was not taken. On review several months later, the once tender nerves had become hypertrophic and wasting on the small muscles of the hand and impaired sensation was found.

   It is endeavoured to see patients started on prophylactic treatment at weekly intervals. If there is no amelioration of the tenderness after two weeks of treatment, such patients are admitted to hospital for systemic rest, plaster casts to the involved limb, vitamin therapy and ensurance of their prophylactic drug regime.

3. *Primary Mono or Polyneuritic Hansen's Disease*

   It would appear that this may be a real entity of fairly frequent occurrence, as hypertrophic ulnar neuritis with associated neuropathy was observed without being able to detect or elicit any history of a skin lesion. Of less frequent occurrence was polyneuritis with associated neuropathy.

   On occasions however, following treatment with D.P.T., skin lesions appeared which on biopsy were diagnosed as frank Tuberculoid leprosy.

   During surveys, the examiner comes across adults with one hand showing marked neuropathic changes but with a small ulnar nerve and nothing to suggest active Hansen's Disease. These patients have not been in the Leprosarium and examination of the skin fails to reveal evidence of old skin lesions. It is assumed that they are old burnt out cases of " mono neuritic " Hansen's Disease. These observations only reinforce the policy of empirical treatment of tender nerves.

4. *Electro-diagnostic Studies*

   It may be beneficial if a series of patients with tender ulnar nerves who ordinarily would have been placed on prophylactic treatment, could have ulnar nerve conduction records and electro-myographic studies on the ulnar innervated muscle before treatment is started with repeated examinations thereafter.

Medical Photography

This has continued in three main spheres.

1. *Identification*
   All persons of the susceptible ethnic group except pre-schoolers have photos taken with a polaroid camera for attachment to their Hansen's Out-Patient Card.

   This practice has been found to be essential for adequate identification and documentation, especially with the advent of using the Hansen's Cards in the field on surveys.
2. Polaroid photos are taken on admission to the Leprosarium of all patients and on discharge.
3. The collection of photographs taken in colour with a CANON FT, QL 35 mm. camera, depicting the varying clinical appearances and lesions of Hansen's disease in the Western Australian Aboriginal has been supplemented as a basis for instruction in Hansen's Disease.

" E " Register

The " E " or External Register which was begun in 1970 now has 22 registrations. There were ten (10) additions during the current year. The criteria for registration being :—

(i) No Leprosarium Serial number.
(ii) Not previously notified.
(iii) Diagnostic biopsy histopathology.
(iv) Abnormal peripheral nerve trunks and associated neuropathy :—
    (a) wasting,
    (b) impaired sensation,
    (c) paresis.

Contacts

1. *Definition*

   That person who has had prolonged close contact with a lepromatous index case. Those accepted under such a scheme to be designated by their exact relationship viz. :—

   Mother
   Father
   Siblings
   Conjugal
   Children
   Household.

2. *Register*

   A central register of contacts by definition is kept by the Leprologist at Derby.

3. *Management of Contacts*

   (i) All contacts are being sought for a full clinical, bacteriological and immunological examination on reception of the lepromatous index case.

   (ii) B.C.G. is administered where appropriate.

   (iii) A policy decision is made regarding chemo-prophylaxis.

   (iv) *Surveillance*
   Registered contacts are examined routinely by the Medical Officer.

   (v) Retrospective genealogical trees of leprous families are being assembled including collateral descent for possible epidemiological research purposes in the future.

   (vi) Long latent period between infection and manifestation of clinical signs in the index case, causes difficulties in establishing the source of infection.

Rifadin (Rifampicin) Trial

A clinical trial of RIFADIN (Rifampicin) on two patients at the Derby Leprosarium was begun on the 25th May, 1971.

Both cases were considered to be clinically, bacteriologically and histopathologically active lepromatous leprosy. One patient's disease was considered to be of relatively recent onset and she had had minimal treatment with D.P.T. CIBA 1906 before being included in the trial. The second case was of a patient with a long history of lepromatous leprosy which in the past had been treated with sulphones and at one stage the disease process had been arrested so far as the split skin smears were concerned but the patient absconded from institutional care and was finally readmitted in a relapsed state with frank lepromatous leprosy. Prior to being included in the trial he had received treatment with D.P.T. CIBA 1906 and D.D.S. Dapsone.

Treatment consisted of 600 mgm of rifampicin daily in one dose taken before breakfast.

Assessment bacteriologically was made by serial split skin smears taken from similar sites at monthly intervals. In addition, serial biopsies were taken from the same sites.

In both cases there was an initial clinical improvement but towards the end of the trial both patients went into reaction. Patient No. 1 would appear to have had a reversal reaction which in retrospect probably indicates some improvement. Patient No. 2 had a down grading reaction and it is considered that his condition had worsened. There were no adverse side effects noted.

School Children Going South for Further Education

At the end of 1970, a policy to examine all pupils (who have been or intended to attend educational facilities in the South) was initiated.

These form a large number of individuals who formerly missed routine Hansen's Surveys.

Difficulties arise in finding out who intends going South. The only formal list available is that supplied by the Department of Education and Science. This only gives the names of those requesting Travel Warrants under the Aboriginal Secondary Grants Scheme. In actual fact, the names on this list are but a small proportion of those who actually go South.

It is anticipated that this particular survey will be more efficient in the future now that all the different groups involved in sending children South for the continuation of their education are known.

Leprosarium

1. *Surgery*

   This has been confined to :—

   (i) Minor plastic procedures to eyelids for correction of ectropion and trichiasis. The procedure of Fox being found to produce a very good result.

   (ii) Excision of trophic ulcers.

   There are a number of hands and feet which are now ready for tendon transplant procedures. However, it is considered that these should wait until an experienced physiotherapist is available.

2. *Eyes*

   There were no eye complications, as a direct result of Hansen's disease. One case of lagophthalmos regained good functional closure without eye damage.

3. *Dental Care*

   Dental coverage was intensified during the year and the state of the teeth is currently good. The Leprosarium is now equipped with a Cavitron Ultrasonic Scaler. In addition, in the coming year, there will be a high speed drill and it is anticipated that the complete low speed unit will be transferred there from the Derby Dental Clinic.

4. *Reactions*

   These appear to have lessened both in frequency and severity.

5. *Anaemia*

   It was necessary to transfuse whole blood on a few occasions during the year.

6. *Nerve Abscesses*

   No nerve abscesses occurred.

7. *Trophic Ulceration*

   There was a fairly frequent occurrence of plantar and lateral malleolar ulcers but they were confined to a recurrent problem in a small number of patients.

8. *Drugs*

   (i) *D.P.T. CIBA* 1906
   This was used to initiate treatment in all new admissions to the Leprosarium. There appears to be little side effects except for minor gastric irritation.

   (ii) *D.D.S. Dapsone*

   This remains the principle drug. It is started in low doses and is built up slowly to a maximum of 100 mgm thrice weekly in the majority of adult cases. There are few cases who are not able to tolerate this dosage.

Among the patients who have remained positive after prolonged therapy with Dapsone, none have changes in the M.I. suggestive of resistance of the M. Leprae to Dapsone. The B.I. fluctuates markedly in these patients and it would appear to be an inability of the individual host to deal with fragmented bacilli that is being witnessed. All of these patients have been infected for many years and over this period have been subjected to various forms of therapy.

(iii) *B* 663 *Lamprene*

This drug has favourably changed the prognosis in a number of patients when used in association with Dapsone. There is considerable improvement in the B.I. with a rapid change to the non-bacilliferous state. As mentioned previously, there has been a considerable decrease in the frequency and severity of reactions. The changes in pigmentation do not appear to worry even the lighter skinned patients which indicates that there is some beneficial subjective improvement as well.

(iv) *Steroids*

The need for steroid has decreased considerably since the advent of B 663 Lamprene. Their use has been confined to dealing with very tender hypertrophic neuritis where neuropathic changes are anticipated or have occurred. Here, their importance is undoubted when used in intensive short regimes.

(v) *Hansolar* (*D.A.D.D.S.*)

This drug has not yet been started in the Leprosarium. Currently under the direction of Professor M. Lockett, the problem of individual and ethnic variation in sulphone metabolism is being evaluated. This might be crucial with the use of D.A.D.D.S. where anticipated plasma sulphone levels will be near the minimal inhibitory concentration for M. Leprae.

9. *Alcohol*

Following the introduction of the drinking rights in the Kimberley in July, 1971, a beer ration was provided for those patients who desired it. The limit is two cans per patient. The tops of the cans are removed before issue.

Arising out of this comes the following observations :—

(i) There is a definite atmosphere of contentment present.
(ii) There is no pressure to increase the number of cans issued.
(iii) The hard core drinkers appear relaxed.
(iv) Fortified wines and spirits entering the Leprosarium are no longer a major problem.
(v) Subsequent to the introduction of the beer ration, a Coke machine was installed with the result that a significant number of patients no longer applied for the beer ration.

This presents an interesting sociological aspect in contrast to the drinking chaos outside the Leprosarium.

Hansen's Disease and the Public

The aim throughout the year has been to reduce the stigma associated with " leprosy " by processes of public education concerning the disease and further modifications in the practical methods of conducting surveys.

Statistics

1. *Leprosarium*

(i) Serial Number as at 31st December, 1971	1,164
(ii) 1st January, 1971–31st December, 1971	
Total number of patients as at 31st December, 1971	126
New Admissions	13
(a) Positive Cases :	
(i) new cases	4
(ii) relapsed cases	5
(b) Negative Cases :	
(i) new tuberculoid	6
(ii) readmissions	27
(c) Not proven histopathologically	3
Discharged to Surveillance	48
Transferred to East Arm Leprosarium	1
Births	2
Deaths	4
Abscondees	0

2. " *E* " *Register*

(i) Serial Number as at 31st December, 1971	22
(ii) Registrations during 1971	10

Thus for the year 1st January to 31st December, 1971, there were 23 new cases and 5 relapsed lepromatous cases.

3. *Surveys*

(i) *Schools*

(a) Total number of school children seen	3,673
(b) Currently on treatment	137
(c) Treatment ceased during 1971	76
(d) " E " Register	6
(e) Ex. Leprosarium	23

(ii) *Others*

(a) Total seen	5,367
(b) Currently on treatment	217
(c) Treatment ceased during 1971	131
(d) " E " Register	16
(e) Ex. Leprosarium	230

(iii) *Balance*

(a) Total of cards	3,644
(b) Currently on treatment	156
(c) Ex. Leprosarium	156

Appendix VII

Derby Public Health Sisters Report

Sister N. G. Cappaert and Sister M. McDonald

During 1971 we had an addition to our staff, Miss D. Shadforth, who had previously worked at the Derby District Hospital as a Nursing Assistant, her services have been invaluable, as she is a local girl and knows most of the people and their relationship to one another, she is also well known by the local people and her visits to them are very well accepted, often more so than ours, as they cease to be just polite and tell her what they really think.

HEALTH EDUCATION

This is still being held on informal lines, but as we now have an aboriginal Community Centre in Derby and have plans to have a weekly film evening there run by the Derby Community Centre Committee, of which we are members, including at least one educational film in the programme. Adult Native Education Department have been most helpful and we also hope to get films from a wider source provided that the expense is not too prohibitive.

A film evening was held recently and the response was very good. There are also plans for Adult Education Classes in the new hall, these will include reading and writing, cooking and home management and craft work. We are still doing most of our teaching during medical rounds on the Reserve. Children and young people take a big interest in what is being done, they ask for such-and-such to be put on their sore, cut or whatever they have, debate whether a plaster or bandage would be best, and during the school holidays, take it is turns to be Nurse while Sister watches and advises, most of them are very good and you realise how much they have taken in by the way they mimic what you have been doing. The camp nurses are still going strong and on the whole are very reliable.

We still have the problem of small children and babies being readmitted to Hospital, with chest infection and gastro-enteritis. A lot of these are regulars and are discharged back to the same conditions with the mothers receiving little or no tuition in their care. A house or hostel near the Hospital where babies could convalesce with their mothers in our view is essential so that the mothers may be taught and supervised in the care of the child. Mothers from stations who are breast-feeding their babies could also be boarded there while their children are in hospital. This establishment could serve the whole of the Kimberley area as well as Derby.

This year we have also begun a teaching programme with the trainee nurse aides. We gave them a lecture on our role and aims and then took them out with us on our routine visits to the Reserve and on station runs, they responded very well and we are now planning to do the same with the supervised practise aides and also any interested Sisters.

We have a two-fold aim in this:

1. To make the Hospital Staff aware of the conditions that their native patients live in and also some of their attitudes.

2. To engender an interest in Public Health work with the idea of recruiting workers in the future.

KINDERGARTEN

At last we have a Kindergarten at the Reserve which commenced in October. It was run this year by Miss Sally Ford, who was a Kindergarten Teacher, at the Matt Furlong Kindergarten. She held classes in the afternoon each day, "Kindy" was well attended, the numbers fluctuating from 15 to 30, some children attending every day others not quite so regularly. It was felt to be helpful in social development but next year it is hoped to have "Kindy" in the morning, when the children will not be so tired.

IMMUNISATION

This year we continued with our immunisations at the Reserve and Mowanjum while encouraging mothers to bring their children to the clinic at the hospital. We have also immunised school girls in the 11–12 years age group against Rubella. The following are the figures of the immunisations that we did, but many more were done at the Hospital clinic:

Triple Antigen	131	Sabin-Poliomyelitis Vaccine	138
Boosters	36	Rubella	25

GENERAL HEALTH

On the whole the general health has improved, if only slightly, we still get the pockets of general ill-health but the number of badly infected cuts and sores is dropping. This seems to us to be due to the Camp Nurses, the fact that early attention to cuts is available and also free, and the realisation that a stay in Hospital may be avoided if these cuts are treated early. The "Monsoon boils" have again appeared but early treatment again helps us to stop the spread.

Nutrition

Nutrition has not improved much and now that all are able to obtain alcohol the incidence of gambling and drinking has risen. There is a decline (in some families) in the amount of food being bought. Money, more than anything, with budgeting, seems to set the pattern of good nutrition. The aboriginal people will eat well if they can buy well. Bread, tea, sugar, meat, fruit, vegetables are bought in that order, so if the money runs out so does the meat, fruit, vegetables. The people have taken very well to the Australian Milk Biscuit and some families buy large amounts. Of course the ones that need it can't afford it, so we use our discretion and give some to the more needy families.

Vitamins A and C are also given out at Kindergarten. The school sells the biscuits in their tuckshop and most of our station stores sell them also. In fact, at one of our stations, the Manager's wife no longer sells sweet biscuits but issues the Australian Milk Biscuit in their rations and this includes the stock camp.

The pensioners, the rich people as far as money goes, are often in a sorry state. They have relatives who move in to help them spend their pension and are then often left with nothing, or they are invited to a game of cards by some of the young professional card sharps who fleece them of all. Sometimes this happens on pension day, needless to say, many of them are then ignored till next pension day.

Trachoma

This year, we decided to try an experiment with the annual blanket treatment on the Reserve. After much talking, discussion and public relations work, one member from each family was made responsible for the giving out of "sulpha" tablets and the neo-cortex eye ointment. Single people were given their own treatment. We were very agreeably surprised with the results. At least 80 per cent. completed the course, many coming for more tablets and ointment as "so-and-so had come to stay now", or "we have run out of the ointment", etc. Of course, we had our failures but mainly these were the ones that hid when we did the handing out ourselves. We needed to do a bit of reminding now and then but the Native Councillors were very helpful. The reinfection rate seems to be high especially at present as there is a large number of people and flies on the Reserve for the holidays.

Hookworm

So far this year, we have four diagnosed cases but have treated 20 others who were contacted with raised eosinophilia.

One child diagnosed had an H.b. of 3·5 mg per cent. The Public Health Inspector took soil samples from 11 wet areas on the Reserve and from one private dwelling. Of these, 10 on the Reserve and the one at the private dwelling proved to have nematode larvae, resembling ancylostoma duodonale. These areas have since been treated with a saturated salt solution by the Native Welfare. As they are mainly around taps, the drainage has been checked and we hope that the situation may improve, although, despite a lecture on the proper use of toilet facilities and the wearing of shoes, etc., it is still possible to see small and large children doing "what comes naturally" at anytime on the Reserve. The Councillors have tried to get the people to use the proper facilities but can't be running after the children all day as it's too hot anyway.

Anaemia

This is in a survey conducted in August, by Mrs. J. Mack from Princess Margaret Hospital, on 86 children under 5 years of age. Twenty had H.b.'s below 11 mg per cent., the lowest being 7·7 per cent. This was a new baby, the others were over 9·5 per cent.

Hansen's Disease

We now have 116 people on treatment in our area, 51 on D.D.S. and all on D.P.T. The D.D.S. patients are seen monthly by Dr. Spargo and the D.P.T. patients 3 monthly. All others are seen 6–12 monthly and any others reviewed 3 monthly. Most of our patients are fairly good with the tablets. Some have lapses occasionally but on the whole, we are generally pleased with them as D.P.T. has a terrible taste and occasionally causes nausea.

Until recently we were feeling that we had overcome the suspicion that surrounds Hansen's checks, but we discovered that 2 people were hiding and both have been admitted to the Leprosarium since. We are now both feeling that we have not moved as far forward as we had thought and must try to regain the confidence that we thought we had gained.

Measles

In November and December there was a measles epidemic. Quite a high percentage of the children in Derby, Mowanjum and the Reserve contracted the disease. Most were treated as out-patients, though a fair number were admitted to the hospital with chest complications. The mothers on the whole were very good and grasped the idea of home nursing very well. Some were disgusted with the treatment, thinking that there should be some wonder drug to provide an immediate cure.

STATIONS

We have extended our station runs this year. We now visit Napier Downs, Kimberley Downs, Meda, Yeeda, Liveringa and Camballin fortnightly and plan to visit Debessa next year. Early this month we went to Kalumburu Mission with Dr. Spargo to do a Hansen's survey and hope in the future that one of us will go once a month on the routine R.F.D.S. flight to do any Public Health work needed.

We have been saved the trip to Napier Downs in the last few months, as when the last Manager left, so did all the Natives and there probably will be none there until the season starts again.

Most of our stations with the exception of Liveringa, have the usual complement of natives—stockboys and families and some pensioners at each. The problems are not great as the Manager looks after them well. Liveringa area is a source of concern, as most of these people do not work at the station and are purely squatters, as the land has been claimed to be tribal.

The situation was becoming intolerable, both for the station people and us, as we were getting nowhere and the people's health and our sanity were at a par. The company felt that they had no responsibility towards these people other than the humane, and we understand they had a disagreement with various Government Depts. as to what should be done; we ourselves were not involved. The result was that the station truck no longer takes the children the 7 miles to school at Camballin, which was then reduced to ½ a dozen children (white) and any other aboriginal children who happened to be camped there for the day. The people were removed from the camp site and set up camp near a billabong from where they have since moved due to flooding from the rain and a bulldozer was driven through the camp site. Actually this was no loss as it resembled a rubbish dump, due to gross overcrowding. The toilet and showers were not used and the bush would be by far a less health hazard. The people can obtain water from the station bore if they wish but many are drinking billabong water. We are continually stressing the need to boil this water. We continue our visiting, river crossings permitted, but are worried about the food situation. The station store is no longer available to these people and up to now, Mr. Rees from the U.A.M. and Native Welfare have been carting food for them, but if there are heavy rains, the roads become impassable for several days. Some of the aboriginal people who are working at Camballin have set up camp there, of all places, beside the rubbish dump.

THE RESERVE

Up until recently, the reserve was looking much cleaner and neater, but with the influx of visitors, it is looking more untidy. The people have been buying sheep from Mowanjum Mission and killing them themselves. It was not realised that instead of burying the offal, they were taking it down onto the marsh and the dogs were dragging it back with monotonous regularity. They have been instructed to bury the skins and offal in future and it is hoped that they do so, as the flies are drawn like magnets. They have never been so bad.

The broken glass problem is still with us and unless constantly reminded, no-one ever thinks to pick it up and put it in the rubbish bins which are provided.

Gambling has reached an all time high, and the hours have been extended from early morning to late at night. It used to be an afternoon pastime. The ages of the gamblers are getting lower too, as also are the ages of gonorrhoea sufferers. This seems to have become more noticeable since drinking rights became general.

MOWANJUM MISSION

Mowanjum is now at the end of the first year of their four year plan. There has been quite a change of scene there, although we haven't yet mastered why some children are continually in and out of hospital in spite of some improved care and conditions.

The kitchen is now well established, providing breakfast and dinner each day with sheep, goat, kangaroo as the main source of protein. Vegetables from the garden are used when possible and forty chickens are now producing eggs to be used at breakfast for the children. One meal costs 20 cents per person.

The laundry flourishes with the work clothes from Demco Meatworks being washed by the ladies and they then have the machines to do their own washing.

Generally, the Mission has taken on a new look. The grounds are kept quite tidy and new lawns are growing but some of the septic systems are breaking down and causing some concern.

Youth Programmes have been started and it is hoped that we may be involved in the Health Education Programme planned by the Staff.

Housing is obviously the number one priority here and it's pleasing to note that the pensioners are to be considered first, for these, in many instances, are still the forgotten people.

Having the trained Sister resident at the Mission has helped, but the work load there remains heavy. A regular weekly visit is made by us, devoting the whole day if necessary plus the Monday afternoon session by Dr. Henderson, and frequent visits between times.

TOWN

Several new transient homes were completed earlier in the year, which means a few more people have moved from the Reserve, but really most of these people are not ready to move. The state of some of these very nice dwellings is something to be seen to be believed. Fly-wire doors are soon broken, along with louvres and windows. Gardens soon become like tips. Children are growing up here and are learning exactly the same pattern their parents are making.

Please, we need more for these people in guidance and teaching them home management. What they are receiving to date is quite inadequate. This is obvious when one of the gardens in the new homes (having had occupants for just several months) is now showing hookworm in soil samples.

CLINICS

There is now at the hospital, a routine clinic for under 5's on Friday and an under 5's clinic at Mowanjum on most Mondays. We are involved in these clinics which are mostly follow-ups of children discharged from hospital, and we are free to bring any children that we are concerned about.

There are now 21 women using a contraceptive method; 12 taking the pill and 9 having had an I.U.D. inserted. The decision to use a family planning method was by choice after both methods had been explained in simple language. To date there have been no failures.

CONFERENCES

During August, all the Public Health Sisters attended the Child Health Sisters' Conference in Perth. This was valuable as we were able to meet many of the Child Health Sisters and establish some rapport. We all felt that the time given to Public Health was not enough and hope to have more time next year.

Following a Meeting in October of the Doctors of the Kimberley region, which was attended by Sisters Cappaert, Bedford (Wydnham), and Ende (R.F.D.S.), it was felt that the Public Health Sisters of the area should meet to discuss the wider field of Public Health discussed by the Doctors and also to discuss our own problems and ideas in relation to the Doctors' plans for this work and our environment.

A Meeting was held Saturday the 13th of November, 1971, at Derby, with full attendance of Public Health Staff on the Kimberley area and also the Flying Sisters. The Meeting proved one thing; that although basically we have the same problems, our ways of tackling them are many and varied.

Appendix VIII

Child Health Services

R. Edmonds, M.B., B.S., F.A.C.M.A. Director

1. STAFF

Staffing in the School Health Service was maintained to strength for most of the year, partly by new appointments and partly by the employment of Medical Officers past retiring age. Our particular thanks are due to these gentlemen who, in my opinion, did a magnificent job under some difficulties. I am glad to report that the new Medical Officers appointed in 1970 and 1971 are continuing to serve this branch of the division with distinction. Also I am very pleased to report that it has not been difficult to acquire enthusiastic and competent sisters in this branch of the service. Although these people have no need of any specific training or qualification apart from the General Nursing certificate, and we have no training course for them, most, if not all, of those we have employed have entered into the spirit and practice of the work with enthusiasm and have rapidly acquired the necessary skills and attitudes.

It continued, during 1971, to be difficult to acquire and hold a sufficiency of triple certificated nurses to fill the vacant posts in the Child Health Centres and the Correspondence sections. We finished up with 84 full time sisters at the end of the year, 14 part-time permanent who work for various periods during the week and 3 part-time whom we use for emergencies during the year. 5 retired, 10 resigned and there were 15 new appointees. Two sisters were on leave without pay working in Vietnam for a year and two others had periods of leave without pay. Only one was on Long Service Leave although there were still 9 on the staff due for this leave at the end of 1971. Two sisters were on study leave, both doing the Public Health Nursing course in Melbourne. Six country centres were unstaffed for part of 1971. This threw an added burden on the correspondence section.

Apart from the Annual Refresher week which was attended by all the staff in August, the usual Pre-School course of 10 weeks took place with 5 sisters attending fulltime. Twelve sisters attended the short 3 day course. Monthly lectures were well attended and tapes of all of them were circulated to the country sisters. One of the sisters completed a Technical Teachers Course at the Technical College, two, as mentioned, gained their Diploma in Public Health and one sister undertook further study, part-time, in the Technical Teachers Course. The new award for the staff which gave them considerable pay increases, occurred in July last year.

We instituted another course in 1971 for Nurses who had been away from active nursing for some time. Five attended this " Mature Age Course " for 3 weeks, and 3 have joined, or will join, the staff. It is hoped to hold this course annually.

School Health personnel are now being subjected to continued courses, detailed in Dr. Thomas' report.

2. NEW CENTRES

Five new centres were opened in conjunction with kindergartens in the metropolitan area. One, the first for some time not attached to a Kindergarten, was opened in Spearwood.

3. WORK IN THE CENTRES

Table 1 shows some essentials of the work done in the centres in 1971 with the two previous years for comparison.

Table 1

	1969	1970	1971
Birth notifications received (including correspondence)	18,818	19,897	22,227
Births registered	20,754	21,618	24,239
Gross attendances	256,304	273,368	276,056
Individual attendances	38,407	40,020	41,927
Home visits	27,778	31,375	31,697
Telephone consultations	18,344	27,063	26,957
Hospital visits	18,825	19,919	17,569
Hearing tests	....	9,049	10,895
Failed to pass	....	58	76
Vision tests	....	1,408	1,015
Failed to pass	....	61	35
Urine tests	....	20,383	22,471
Expectant Parent classes (number held)	....	576	245
Individuals attending	....	1,759	3,136

There is, as usual, a substantial increase in the total figures, and it must be remembered that this has all been done with approximately the same staff as in previous years. There was a 12 per cent. increase in the number of births over 1970, yet the total attendances grossed were only 1 per cent. higher. However, the number of individuals attending increased by 4·7 per cent. I am quite satisfied that had we had more people in the field, the attendances would have been considerably higher. As has been noted before, we have been unable to meet the demand of people attending centres, in the country, due to shortage of staff, where centres have been closed down, and in the metropolitan area, by the large numbers attending in practically all of the centres. It is significant that the number of home visits is not increasing *as it undoubtedly should be*, but this, as has been noted before, is due to pressure of work *in* the centres.

I would estimate that in the metropolitan area alone, adequately to meet the needs of non-attenders and others (these probably represent about 5–10 per cent. of families) the centre staffs should increase by at least one third. Home visiting, apart from the initial call, is often required ; it is time consuming and nowadays only takes place in extreme urgency and then most often in the sisters own time—before work, at lunch time or after hours. I have yet to hear one sister complain of this extra work ; they merely express regret that they cannot do more.

The urine tests, carried out by Princess Margaret Hospital on specimens collected by the staff in the field, show a significant increase. It seems unlikely that any significant number are being missed. The number exceeds the number of birth notifications received.

Although less classes were held for expectant parents due to rationalization of staff—nearly twice as many attendances occurred as compared with 1970.

In general I can only repeat that in order to do more work in the homes and to increase the " job satisfaction " of the nurses in the field, we shall have to increase considerably the number of people working from centres, or greatly reduce the established facility for the public to attend the centres. This pattern of clinic attendance of Australian mothers is, however, so firmly established that one cannot contemplate such a move with any equanimity.

4. CORRESPONDENCE SECTION

Table 2 shows some of the figures collected in this section, and in this alone the increases are probably of more significance than the actual figures.

Table 2

	1969	1970	1971
Birth Notifications received	830	1,229	2,173
" New " babies	1,024	1,129	1,603
Total requests for advice received	10,841	13,557	19,550

Table 3, from the Annual Report of the Sister-in-charge of Correspondence, shows some of these (as percentage difference) between 1970 and 1971. This represents a very considerable increase in work output.

Table 3

Increase in work by Correspondence section 1971 *over* 1970

	per cent.
Birth notifications	77
Contact with new infants	42
Requests for help	44
Letters from Mothers etc.	44
Letters to Mothers etc.	11
Visitors to Headquarters under 2 years	54
Telephone requests	54

Obviously with reduced staff (there were 2 sisters short throughout the year) something has to " go ". Table 4 shows some of the work which was *not* done in 1971. The percentage decreases, (which should all be increases in fact) is disappointing but under the circumstances, inevitable.

Table 4

Decreased work in Correspondence section 1971 *over* 1970

	per cent.
Pre-school (2–5 years) Individuals helped....	16
Expectant mother requests	19
Individual expectant mothers	10
Lectures and demonstrations (number)	25
Audience at above (individuals)	68
Teachers, letters from	28
Teachers, letters to	7

Quite frankly I do not understand how this devoted staff has managed with the increased work load, occasioned not only by the increase in the population which has no established centres, but, from time to time, (in fact on 17 different occasions in 1971) undertaking the responsibility of country and sometimes even metropolitan centres which had closed down due to staff shortages.

This was achieved in part by reducing some of the preparation and revision of leaflets and pamphlets (and this has got rather behind). The majority of the stalwarts in this section have been in the service for a long time and are approaching retirement. Attempts have been made in the past to replace these with younger sisters, not always successfully, because marriage seems to intervene from time to time. The sheer volume of the work is extremely demanding and in addition, the standards set by these older and more experienced sisters are very high. It is required of all in the correspondence section to work as members of a team, not only with their colleagues but with the very devoted clerical staff, without whose continued efforts the work would be impossible.

Other duties undertaken by the headquarters staff have been reduced due to pressure of importunate demands of their country clients, the reduction of visits to country areas, lectures and demonstrations to school children and others and even, I regret to say, not opening up correspondence with some newly developed areas.

The long established mothercraft and fathercraft correspondence teaching in schools employs four sisters and two typists, and involves close liaison with both the educational hierarchy and individual teachers in the schools and, as well as the actual correspondence lessons, visits to schools and, annually, to the North West camp school at Point Peron. Here again there is scope for expansion.

The newly established Parenthood Course for High School students was repeated in 1971 with some increase in the numbers attending, the total being 510 as against 316 in 1970, (158 boys and 352 girls). We took in six country schools this year, and five metropolitan high schools. Special classes were held at the Selby Centre and St. Clare's School at the Home of the Good Shepherd. One part-time sister was added to the staff this year. It appears that the Education Department appreciates this course and in 1972 will involve a much greater participation of the teachers in the high schools. This will enable the course to be much more widely spread.

5. PRE-SCHOOL HEALTH

Table 5

Number of Individuals over the age of 1 *year attending Child Health Centres* 1964–1971

	1–2	Over 2	Total
1965	6,247	4,901	11,148
1966	6,968	5,873	12,841
1967	6,390	5,542	11,932
1968	7,438	5,690	13,099
1969	8,092	6,071	14,183
1970	6,915	8,911	15,186
1971	9,651	5,870	15,521

The total between one and five years has increased significantly but the ratio has remained much the same as it was in all the other years except the unexplained reversal in 1970.

We employed Dr. Mary Roberts for some of the year in examining children in kindergartens and child minding centres but she resigned after about six months, and since then both in the country and the metropolitan area there has been a merging of the pre-school section with the school section. The figures are shown in the tables in the School Health section of this report.

6. SCHOOL HEALTH SERVICE

Dr. Thomas reports :—

" It should be stated at the outset that, due to different methods of working and to a change to different statistical categories, and also due to commencing integration of the pre-school into the School Health Service (later to be entirely integrated), the figures for 1971 are not comparable with those of previous years.

The main event of the year was the creation of an extra region (Region VII) requiring the appointment of another Medical Officer and a further three sisters to staff it. This addition to the School Health Service establishment was necessary in view of the increase in the school population and the number of schools, and some widening of the scope and increased sophistication of the Service. Actually this additional region was staffed by transferring the Pre-school Medical Officer and nurses to the school section and required no additional staff.

Table 6

EXAMINATIONS BY SCHOOL MEDICAL OFFICERS 1971

	Metropolitan			Country			Whole State		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Examined	14,737	13,218	27,955	4,272	3,939	8,211	19,009	17,157	3,6166
Referred for Medical Attention	1,870	1,574	3,444	821	735	1,556	2,691	2,309	5000
Referred for Home Attention	1,003	416	1,419	325	156	481	1,328	572	1900
Referred for Dental Attention	555	494	1,049	322	260	582	877	754	1631
Total Referrals	3,428	2,484	5,912	1,468	1,151	2,619	4,896	3,635	8531

Table 6 shows the total numbers of children referred by school medical officers for medical attention, home attention and dental attention. During 1971 integration of the pre-school with the school health service was commenced and therefore these Table 7 figures include a proportion of pre-school children.

Table 7

REASONS FOR REFERRALS FOR MEDICAL ATTENTION 1971

Type of Medical Attention	Metropolitan			Country			Whole State		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Vision	858	847	1,705	239	313	552	1,097	1,160	2,257
Hearing	290	255	545	140	120	260	430	375	805
Other	722	472	1,194	442	302	744	1,164	774	1,938
Total	1,870	1,574	3,444	821	735	1,556	2,691	2,309	5,000

In Table 7 the figures for "Referred for Medical Attention" are broken down into the reasons for such referral. In every instance the referral is made to the family doctor by a sealed addressed letter enclosed with the formal notification posted to the parents.

Table 8

SCHOOLS VISITED BY SCHOOL HEALTH TEAMS IN 1971

Kindergartens	Child Care Centres	Primary	Secondary (including Junior High Schools)
35	2	431	88

Table 9

EXAMINATIONS BY SCHOOL MEDICAL OFFICERS (PRE-SCHOOL) 1971

	Metropolitan			Country			Whole State		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Examined	3,127	2,741	5,868	507	492	999	3,634	3,233	6,867
Referred for Medical Attention	274	210	484	25	17	42	299	227	526
Referred for Home Attention	37	19	56	3	1	4	40	20	60
Referred for Dental Attention	128	94	222	7	4	11	135	98	233
Total Referrals	439	323	762	35	22	57	474	345	819

Table 9 shows the total number of pre-school children examined by doctors, (apart from those included under Table 6 as stated above), and, of these, the number referred to the family doctor for medical attention, and of those referred for home and dental attention.

The work of the sisters in the schools commences with a preliminary visit at which she "prepares" the school for the doctor's visit to come a week or so later. This preparation consists of a certain amount of administration, sorting of school medical cards, arranging medical examination facilities, etc., and some routine vision and hearing testing. This "prepared" school is then visited by the Medical Officer who routinely examines the beginners, and all other new enrolments not previously examined. He also examines any children referred for a specific reason by the sister, the teacher or the parent.

In some schools the doctor has departed from this system of routine medical examinations and has, as part of a trial pilot study, instituted the "selective" method, a method rapidly gaining favour overseas. By this is meant that otherwise apparently healthy children are not routinely examined and the doctor sees only those who, for some reason or another, are referred to him by the sister, teacher or parent, although vision and hearing testing are carried out as usual. This screening of children for referral requires skilled appraisal by the sisters which, even without special training, most seem to be acquiring fairly quickly.

However, whatever method is used, defects requiring medical attention are, as mentioned above, referred by the school medical officer to the family doctor and, in due course and as necessary, the sisters make "follow-up" home visits to the parents to check what action has been taken.

The monthly clinical lectures continued as usual and guest speakers talked on a variety of subjects directly or indirectly related to school health.

The second annual refresher course was held during the first week of the second term school holidays and we were fortunate in being treated to excellent talks by guest lecturers, plus a joint contribution from two of our own medical officers.

Efforts to increase rapport with the schools have been maintained throughout the year and although the results do not appear to be dramatic one feels that the Service is steadily gaining ground in this area. Liaison with family doctors is definitely better and is improving all the time.

The year can be regarded generally as a very satisfactory one, with an increase in establishment in an endeavour to cope with the ever increasing school population. Creating a more sophisticated service is even more so governed by budgeting considerations but within the limits imposed one feels that this is being done."

7. VITAL STATISTICS

Total births, deaths under one year, infant mortality rate for Perth Statistical Division, Rest of State and the whole State, from 1965 are shown in Table 10.

Table 10

INFANT MORTALITY 1965–1971—WESTERN AUSTRALIA

	Perth			Rest of State			Whole State		
	Births	Inf. Deaths	I.M. Rate	Births	Inf. Deaths	I.M. Rate	Births	Inf. Deaths	I.M. Rate
1965	9,091	169	17·1	6,285	182	29·0	16,186	351	21·7
1966	10,463	171	16·3	6,544	158	24·1	17,007	329	19·3
1967	10,952	148	13·6	7,071	166	23·4	18,023	314	17·4
1968	12,018	205	17·1 (14)	7,523	192	25·6 (24)	19,541	397	20·3 (16)
1969	13,094	240	18·3 (15)	7,600	213	27·8 (24·5)	20,754	453	21·8 (18·6)
1970	13,908	251	18·0 (15·2)	7,710	208	27·0 (23·4)	21,618	459	21·2 (17·6)
1971	15,843	269	17·0 (13·7)	8,396	195	23·2 (19·6)	24,239	464	19·1 (15·6)

Commencing in 1968 the state adopted the practice of considering as live births those born after 20 weeks gestation, instead of the previous 28 weeks. The significance of this on the infant mortality rate is demonstrated by the figures in parenthesis beside the stated rate, to compare with the figures in years prior to 1968.

In Figures 1 and 2 the significance of the overall picture is indicated graphically. The state as a whole is approaching much more acceptable figures for infant mortality.

Total Live Births

While over the previous five years the average increase in total births as against the previous year was 6·2 per cent., the increase in 1971 over 1970 was 12·13 per cent. Furthermore the birth rate has risen to approximately 24·24 per cent. for 1971 which is the highest since 1957.

This may be a passing phase but should be noted. Certainly the increased total births will continue to strain our resources unless they are increased. For example, 10 years ago the total live births were 17,078 and last year 24,239, an increase of approximately 40 per cent. There is no need to elaborate on the increased load which is applied to a numerically virtually unaltered staff.

It is perhaps a little heartening to find a really significant decrease in the infant mortality rate in the "other" statistical areas.

However there is one very disturbing feature illustrated in Table 11.

Table 11

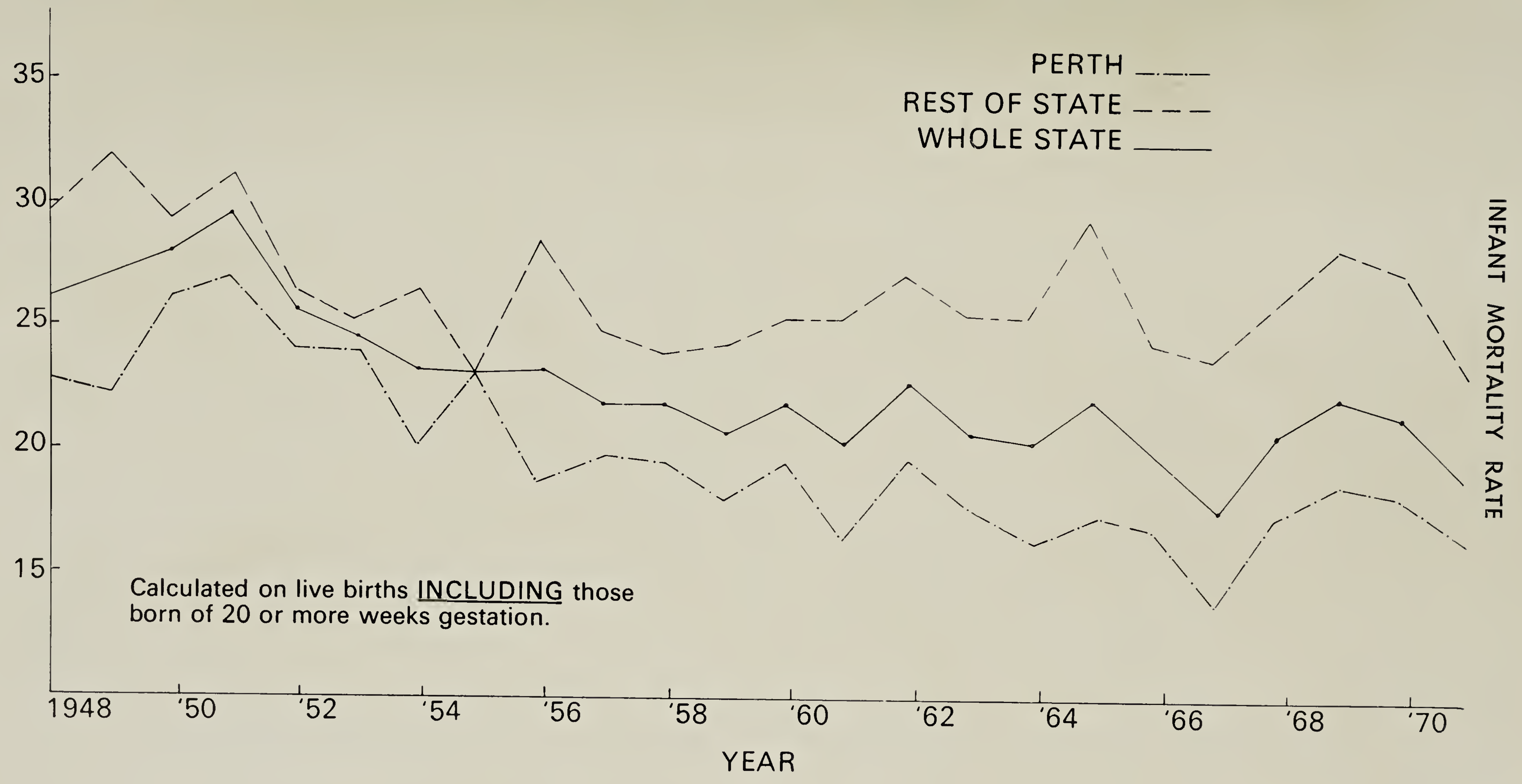
NEONATAL DEATHS AS PERCENTAGE OF TOTAL INFANT DEATHS 1965–1971

	Perth Statistical Division	Rest of State	Whole State
1965	71	69	70
1966	77	71	75
1967	82	70	75
1968	80·5	65	73
1969	81·5	60	71
1970	74·9	61	63·5
1971	69	61·5	65·6

As has been stated before we believe that not more than 25 per cent. of all infant deaths should take place after the age of 28 days. That is neonatal deaths, expressed as a percentage of total infant deaths, should reach or exceed 75 per cent. in a healthy Western community. In fact greater than 80 per cent. is achieved in the better countries nowadays.

FIG 1.

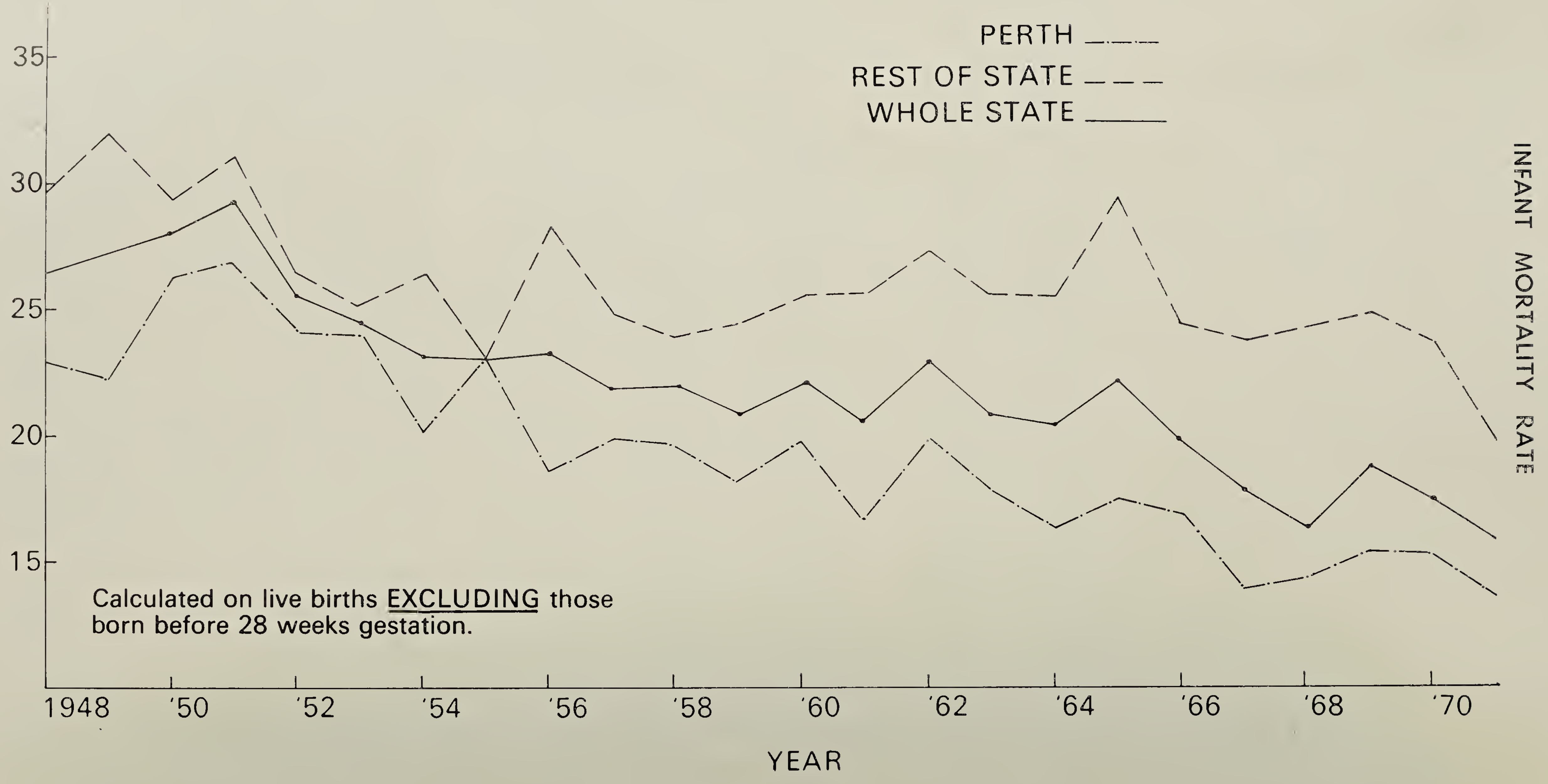
INFANT MORTALITY RATES, WESTERN AUSTRALIA, 1948-1971



Calculated on live births INCLUDING those born of 20 or more weeks gestation.

FIG 2.

INFANT MORTALITY RATES, WESTERN AUSTRALIA, 1948-1971



Calculated on live births EXCLUDING those born before 28 weeks gestation.

The figures in Table 11 show that this was achieved in Perth Statistical area in the years 1966 to 1969 inclusive. However, the last two years show a deterioration and this is unexplained. Attempts will be made to elucidate. It may be that there were factors operating in 1970 and 1971 which will not recur, but this cannot be assumed without further evidence. Since, in the past, the excess deaths in this age group have been shown fairly conclusively to occur among the aboriginal and part aboriginal infants, one would first look there for this anomaly. However the most significant rise in the 4 weeks—under 1 year group occurred in the metropolitan and not in the country areas. This needs explanation.

Ex nuptial births

In 1958 the ex nuptial births were 5·1 per cent. of total births in this State. Ten years later they were 10·8 per cent. of the total, They have stayed around about this figure for the last three years but in 1971 they reached 11·2 per cent.

2,720 illegitimate births to me, in a State this size, is a significant figure both for the present and the future.

8. IMMUNIZATION STATUS

An attempt was made to determine immunization status of two year olds (born early in 1969) with the following results:—

1,000 children were traced and the following table shows the results.

Table 12

Total children traced	1,000
Children who had completed all immunizations due at 2 years	744 (74·4%)
Children who had other immunizations complete, but had not had the booster Triple Antigen	110 (11%)
Children who had failed to complete the primary 3 Triple Antigen injections	47 (4·7%)
Children who had failed to complete the primary 3 Sabin vaccine doses	142 (14·2%)
Children who had been vaccinated against smallpox	54 (5·4%)

This shows an excellent response to the primary triple antigen, i.e., 95·3 per cent. a reasonable but not quite as satisfactory response to the primary Sabin vaccination and a falling off thereafter. 11 per cent. did not have their booster triple antigen before the age of two years. Indeed it would not be unreasonable to assume that the later boosters are even less complete.

A somewhat disturbing feature of this survey was that around one third of the children born in January 1969, were not immediately traceable. It is entirely likely that, had they been traced, the figures of completed immunizations would have been worse since they represent a rather mobile section of the population. It was hoped to repeat this survey in 1972 but pressure of work in the centres made me reluctant to get this sampling done. It is also regretted that the expected survey of breast feeding which we hoped to do in early 1972, was abandoned for the same reasons.

9. SCREENING FOR URINARY TRACT INFECTIONS

A largish girls' school was used to test methods for screening school girls for covert urinary tract infections.

This survey involved a blind comparison of several tests of the urine of 509 girls (day and boarder) ranging in age from 5 to 17½ years. It resulted in four girls being diagnosed as having symptomless recurrent urinary tract infection. The major results were as follows:—

509 girls were tested by the Urocult tube and other tests.

79 were retested by the full range because of suspicious findings.

7 of these were subjected to further clinical and other examinations.

4 of these were considered to be chronically infected.

On re-examination of the original data for the 509, it was revealed that these 4 girls were the *only* ones whose Urocults gave unequivocal evidence of over 100,000 E. coli per millilitre.

From this survey it can be stated that there is strong evidence that the Urocult tube is an entirely satisfactory screening method. If it were ever considered proper to apply screening on a state wide basis, this method should be used until a better one is found.

There are, however, three reasons for caution in deciding upon making this test more widespread:—

(1) it is somewhat doubtful whether inapparent urinary tract infections, that is those who do not have any symptoms, should be investigated and treated,

(2) no method can be sure of picking up all cases, as there may be individuals with intermittent infection; therefore "passing" screening tests could engender a false sense of security.

(3) it would appear that, although the screening of all girls at an appropriate age attending schools is not beyond our present capacity, supervision of the follow-up of suspects would, at this time, stretch our resources considerably.

It appears that by far the most fruitful action to be taken in these urinary tract infections, particularly in young girls, is the recognition of abnormalities in the urinary tract, either developmental or those produced by chronic recurrent infection. It seems, at the moment, to be most important to encourage the public and the medical profession to keep urinary tract infection in children very much in the forefront of their minds when children present with pyrexia and to take appropriate actions to determine the presence of significant infection or otherwise. This can most rapidly and efficiently be done with the Urocult tube. If infection *is* present, carry out a thorough investigation of all such cases including certainly an intravenous pyleogram and a search for ureteric reflux.

It would appear that the sequelae of chronic urinary tract infections which cause ill health and often shorten life in women are best averted this way.

10. CONCLUSIONS

As I retire towards the end of 1972 this is the last Annual Report I shall write. It would therefore seem appropriate to express some opinions about the future of Child Health Services.

First, whatever may be the future of medical services in general, I believe there is a need for a State co-ordinating body which is well staffed and equipped to attempt to keep an overall function in Child Health, and that it should remain an entity within the Health Department.

There is I believe a need for more, not less, continued effort by the sisters working in centres and going into the homes. It is possible that their efforts should be supplemented by those of less qualified staff. There is a need for more screening and help in health generally in the schools, including I believe in the field of technical education and in teachers training colleges, extended parenthood courses, the ante natal classes and the maintenance at least of the correspondence with those who are out of personal touch.

Next, the service should have available sufficient professionally skilled people to teach and to guide all who deal with children of all ages in the methods of recognition, assessment, and management of handicapped children, as was so strongly suggested in my 1969 report.

As regards the handicaps in all their manifestations, I should repeat perhaps that this service should not be extended into sophisticated treatment. This is best left to other agencies, both educational and medical, but the multiplicity of these agencies requires some central body which can assist in co-ordination for the benefit of the individual children.

Next, there is a need for extension and improvement in the records system. It seems essential that Child Health Services should join in with other health record linkages and plans are already afoot to initiate this. These records, in my opinion perform two major functions. First they are of value to the individual both in health and in departures from normality. Secondly and perhaps more important, they can produce significant figures indicating the direction in which statutory and voluntary agencies should move for the benefit of children who depart from the normal in any way. By no means least they should indicate also where money and/or research is required.

Perhaps one of the most important requirements of a Child Health Service is that the participants therein should continue to improve their skills and attitudes, not only for the immediate benefit of their individual clients but so that their standing with their professional colleagues, mainly but not exclusively medical, should improve and consolidate also. A high percentage of preventive paediatrics should lie in the hands of the family doctor, and unless general practice is doomed to extinction, our policy of working as far as possible through the family doctor should be continued and amplified. I would even suggest that one of the main functions of a service is gradually to transfer the major burden from the public field into the hands of the general practioner. This will only be possible if two things occur in concert. First, a greater skill and awareness of preventive paediatrics on the part of the family doctor and second, appropriate working conditions, plus skilled help available to him, e.g., in adequately equipped health centres.

There is one other point which should be reiterated. Western Australia is a growing State and decentralisation of many social matters is gradually occurring. Unless there is envisaged some drastic change in governmental structures, we should, I believe, work towards an improved and increasing relationship with local authorities. There are already signs of improvement in this direction and this should be pressed.

In all this we should bear in mind our objectives which basically are two:—

(a) improving the quality of family life in all sections of the community by giving support to the parents, particularly the mothers of young children, and to aid in the development and enjoyment of life of the children particularly in the early and most important formative pre-school years, and

(b) to provide a widely spread screening net which will recognise and arrange for proper assessment of all children who depart from the normal, to the end that these abnormalities should be recognised and dealt with at the earliest recognisable age.

Finally, on a personal note, I should like to say this. Professional people working in a Government department tend to report and comment on the work of their professional colleagues, mainly, in a Health Department, doctors and nurses. We frequently forget to consider the importance of our administrative and clerical colleagues. I should therefore be grateful for the opportunity of expressing my very sincere appreciation of the relationships I have enjoyed with our departmental administrative and clerical staff, whose attitudes and actions have, despite financial and other restrictions, almost invariably made our professional work easier.

Appendix IX

Pharmaceutical Services Branch

W. M. Griffiths, B. Pharm., F.P.S. (G.B.), M.P.S.
Chief Pharmacist

Poisons Act and Regulations

Several amendments to the Poisons Act Regulations came into force revising standards for containers and warning statements on labels of poisons and hazardous substances. Specifications of safes for storing drugs of addiction were defined, and fees for poisons licences were brought into line with current monetary values.

The list of prohibited and specially controlled substances was revised by proclamation.

A new Appendix to the Poisons Act was issued to consolidate previous amendments and include new chemicals and drugs in classifications recommended by the State Poisons Advisory Committee and the National Health and Medical Research Council.

The branch maintained its scheme of collecting surplus Drugs of Addiction and poisons for safe disposal and monitored transactions of drugs of addiction throughout the State.

Pesticides

New regulations were adopted. The Commissioner was given power to specify which pesticides may be used on specified crops in prescribed areas of the State, and to prohibit the use of specified pesticides in prescribed areas of the State at specified times of the year. Provision was made for safe disposal of used pesticide containers.

Other amendments require licensing of Commercial Pesticide Firms and Pesticide Operators. Pesticide firms will need to provide efficient equipment for use by licensed operators. Each operator's license will designate the particular pesticides, their concentrations and the types of pest control operations permitted to him. Operators will be required to show knowledge and competency in safe and effective handling of each pesticide in which he applies to be licensed, with special regard to precautions necessary to ensure safety to users, bystanders and occupiers of treated premises.

26 submissions for clearance of new agricultural chemicals or new uses of registered chemicals were examined under the National Clearance Scheme operated by the Technical Committee on Agricultural Chemicals from Canberra.

211 applications were received for registration of formulated products in Western Australia by the State Pesticides Advisory Committee. 197 were approved, 14 are still subject to consideration.

135 previous registrations were cancelled or withdrawn.

1,306 formulations were registered on 31st December, 1971.

Appendix X

Dental Health Service

J. L. Prichard, Dip.D.S., B.D.Sc., – Principal Dental Officer

This report details activities of the Dental Health Service for the year ending 31st December, 1971.

Clinic Services

During the year the Service operated dental clinics at :—

Wyndham ; Derby ; Broome ; Pt. Hedland ; Tom Price ; Dampier ; Newman ; Exmouth ; Kojonup ; Beverley and Margaret River.

Regular visiting services were provided to outstations at :—

Kununurra ; Balgo Mission ; Halls Creek ; Kalumburu ; Leprosarium ; Lombadina ; Beagle Bay and La Grange Missions ; Fitzroy Crossing ; Cockatoo and Koolan Islands ; Goldsworthy ; Wittenoom ; Roebourne and Onslow.

During 1971 an Itinerant Road Service operated in towns and on pastoral stations in the Murchison, Pilbara, Ashburton and Gascoyne regions.

During the year new clinics were established at :—

Newman
Pt. Hedland
Kojonup and Boyup Brook

Table I shows the volume of treatment provided.

Clinic Staff

For the year ended 31st December the clinics employed :—

20 Dentists
6 Nurses
12 Dental Chairside Attendants.

School Children's Examination Scheme

Each year children in primary schools receive a dental inspection. In the year under review examinations were carried out for 61,241 children in 872 institutions and schools.

Examining dentists conducted various health education projects during school visits. Teachers are able to draw on ready advice in the dental health aspects of health education. Parents and Citizens groups and community service groups also participated in these activities—in all some 91 groups were addressed and generally assisted with health education.

Education Lecture Programme

An education assistance programme is provided to various trainee groups :—

	Number of lectures
General Nurse Training Schools	44
Ngala	12
Nursing Aide Schools	20
Teachers Colleges	52

Education assistance is also provided at Teachers In-service courses and 56 advisory visits were provided to schools on request.

Subsidised Dental Care

During the year ended 31st December the programme for subsidising the cost of dental care to eligible primary school children and pensioners was extended to secondary school children.

Under this programme assistance towards the total cost of care is provided on a sliding scale.

Weekly income and size of family are the two principal factors in assessing eligibility for assistance.

Table II shows the assessment proportion chart.

Table III gives detailes of costs and treatment provided under this scheme. The cost per child is $15.10 per head and the cost per pensioner is $43.28 per head. Altogether 2,320 applications were received for assistance. Assistance was made available to 2,060 persons.

Fluoridation of Water Supplies—Survey

The first survey of this series was conducted in November 1967. This provided a base line against which subsequent surveys could be compared. The next survey in this series will be in November 1972.

Table I

YEARLY SUMMARY OF TREATMENT IN DEPARTMENTAL CLINICS—1971

	Total Patient Attendances	Number Subsidised Patients	Number Free Patients	Teeth Extracted	NUMBER OF TEETH RESTORED						Dressing	X-ray	Prophylaxis	Minor Surgery	COMPLETED DENTURES					
					Synthetic	Amal.		Inlay	Crown Bridge	Completed R.C.T.					F.U.	F.L.	P.U.	P.L.	Rebase	Repairs
						Single Surface	Compound													
Children	13,849	245	6,849	2,946	1,555	4,786	2,546	18	21	31	841	666	967	199	4	1	23	3	....	5
Adults	21,670	244	2,536	6,624	3,847	4,123	5,321	155	113	158	1,401	2,068	1,023	229	391	251	256	85	85	475
Total	35,519	489	9,385	9,570	5,402	8,909	7,867	173	134	189	2,242	2,734	1,990	428	395	252	279	88	85	480

Table II

PUBLIC HEALTH DEPARTMENT—ASSESSMENT PROPORTION CHART—GROSS WEEKLY INCOME

Patients Proportion		Nil	20%		30%		40%		50%		60%		80%		100%
Family Units	Family Unit Value	Not Exceeding	Exceeding	Not Exceeding	Exceeding	Not Exceeding	Exceeding	Not Exceeding	Exceeding	Not Exceeding	Exceeding	Not Exceeding	Exceeding	Not Exceeding	Exceeding
		$	$	$	$	$	$	$	$	$	$	$	$	$	$
Single Person	11	13.75	13.75	16.00	....	....	16.00	17.60	17.60	19.80	19.80	23.10	23.10	27.50	27.50
M. & W.	21	26.25	26.25	28.50	28.50	30.45	30.45	33.60	33.60	37.80	37.80	44.10	44.10	52.50	52.50
M., W. & 1 C.	27	33.75	33.75	36.45	36.45	39.15	39.15	43.20	43.20	48.60	48.60	56.70	56.70	67.50	67.50
M., W. & 2 C.	32	40.00	40.00	43.20	43.20	46.10	46.10	51.20	51.20	57.60	57.60	67.20	67.20	80.00	80.00
M., W. & 3 C.	37	46.25	46.25	49.95	49.95	53.65	53.65	59.20	59.20	66.60	66.60	77.70	77.70	92.50	92.50
M., W. & 4 C.	42	52.50	52.50	56.70	56.70	60.90	60.90	67.20	67.20	75.60	75.60	88.20	88.20	105.00	105.00
M., W. & 5 C.	47	58.75	58.75	63.45	63.45	68.15	68.15	75.20	75.20	84.60	84.60	98.70	98.70	117.50	117.50
M., W. & 6 C.	53	66.25	66.25	71.55	71.55	76.85	76.85	84.80	84.80	95.40	95.40	111.30	111.30	132.50	132.50
M., W. & 7 C.	60	75.00	75.00	81.00	81.00	87.00	87.00	96.00	96.00	108.00	108.00	126.00	126.00	150.00	150.00
M., W. & 8 C.	68	85.00	85.00	91.80	91.80	98.60	98.60	108.80	108.80	122.40	122.40	142.80	142.80	170.00	170.00
M., W. & 9 C.	....	95.00	95.00	101.00	101.00	109.00	....	....	120.80	136.40	....	....	....	....	....
M. or W. & 1 C.	17	21.25	21.25	22.95	22.95	24.65	24.65	27.20	27.20	30.60	30.60	35.70	35.70	42.50	42.50
M. or W. & 2 C.	22	27.50	27.50	29.70	29.70	31.90	31.90	35.20	35.20	39.60	39.60	46.20	46.20	55.00	55.00
M. or W. & 6 C.	43	53.75	53.75	58.05	58.05	62.35	62.35	68.80	68.80	77.40	77.40	90.30	90.30	107.50	107.50
M. or W. & 7 C.	50	62.50	62.50	67.50	67.50	72.50	72.50	80.00	80.00	90.00	90.00	105.00	105.00	125.00	125.00

Pensioners, Prosthodontia only—Further 50% rebate on assessment.
Widows (with no other income) 1 or more dependants—NIL assessment.

Table III

SUMMARY OF APPLICATIONS RECEIVED AND CLAIMS PAID—JANUARY-DECEMBER 1971

Total Number of Applications Received : 1,726

Applications Received on Behalf of :

	Number eligible	Number not eligible	
Children	1,219	177	
Pensioners	801	48	
Others	40	35	
Total	2.060	260	= 2,320

SUMMARY OF CLAIMS PAID :

	Number	Total	Subsidy	% of Total Fees	No. of Visits	No. of Fillings	No. of Extr.	New Pros.	Other Pros.	No. SnF2	Other Treatments
		$	$								
Children	1,399	29,206.70	21,130.62	72·35	3,927	3,615	1,507	17	10	182	976
Pensioners	831	50,504.67	35,970.60	71·22	2,825	400	1,022	752	185	39	303
Others	23	1,011.65	914.23	90·37	69	51	2	9	4	....	19
Total	2,253	80,723.02	58,015.45	71·86	6,821	4,066	2,531	778	199	223	1,298

Appendix XI

Nursing Administration Section

Miss M. E. Beard, D.N.A., F.C.N.A. – Principal Matron

NURSING SERVICE

Hospital staffing has shown a slight improvement this year, but shortages are still evident in many areas.

EMERGENCY NURSING SERVICE

This service inaugurated in 1966 has now become almost an integral part of the Nursing Service of Western Australia. The following summary covers the period from January to December 1971.

1. Appointments	
6 months contract	17
12 months contract	33
Total	50
2. Resignations before completion of contracts	3
3. Terminations	Nil
4. Contracts completed	35

NURSING CADETS

During 1971, 11 Nursing Cadets were appointed to hospitals as follows :—

Bunbury	4
Carnarvon	1
Esperance	2
Kalgoorlie	1
Northam	1
Osborne Park	1
Swan Districts	1
Total	11

By 31st December, 1971, all except 3 (Bunbury) of this number had commenced or were about to commence training.

Note :—The introduction of a higher minimum educational standard (4th year High School) for entry to General Training in 1973, will, it is expected, automatically eliminate the need for the Nursing Cadet, except in isolated instances.

Refresher Courses—for non-practising nurses wishing to resume practice, have been organised by the W.A. State Committee, College of Nursing, Australia, and some financial assistance has continued to be made available to applicants by the Medical Department, although to an increasing extent this role has been taken over by the Commonwealth Department of Labour and National Service.

The details are as follows :—

1. Perth, in February, June, September, November—attendance	175
2. Esperance (July), Northam (August) —attendance	45
Total	220

PRIVATE HOSPITALS AND NURSING HOMES

(i) New Hospitals and Nursing Homes have been opened as follows :—

Stirling (General) Hospital, Hayes Avenue, Mt. Yokine	78 beds
St. George's Nursing Home, Pinaster Street, Mt. Lawley (Part of Anglican Church complex)	134 beds
Gwenyfred Nursing Home, 62 Gwenyfred Road, Kensington	60 beds
Kareeba Nursing Home, 5 Kemp Place, Rivervale	54 beds

(ii) As well, extensive additions have increased the numbers of beds at :—

Agmaroy, 19 beds to a total of 50 beds
Hamersley, 38 beds to a total of 79 beds
Braemar, 17 beds to a total of 46 beds

Total number of new beds :—

General	78
Nursing Home	322
	400

(iii) Plans for 20 new nursing homes and 7 extensions to existing buildings, have been examined. The number of beds involved is 1,024. During the year construction commenced on 7 of these nursing homes (307 beds).

(iv) Nursing Homes closed :—

" Seaton Lodge ", Albany	21 beds
" Faversham ", Mundaring	11 beds
" Leawood "	11 beds

INSPECTIONS

Private Hospitals and Nursing Homes	262
Departmental and Country Board Hospitals	89
Total	351

HOME DELIVERIES

Only 3 home deliveries in 1971 ; one in each of the months of January, February and April. Sr. E. Head, the domiciliary midwife concerned, is now doing less work in this field.

PUBLIC HEALTH SISTERS

Since the appointment of the first Public Health Sister at Derby in August, 1968, this service has now grown to encompass the townships and environs of Wyndham, Kununurra, Derby, Port Hedland, Carnarvon, Leonora and Laverton, Pingelly, Narrogin and Geraldton, as well as the service at Halls Creek, Fitzroy Crossing and Roebourne by A.I.M. Sisters.

In January, Miss Mary Reid was appointed Senior Sister for this service, Following the appointment she was granted a "Helen Bailey Scholarship" to study for The Diploma of Nursing, majoring in Public Health Administration at the New Zealand School of Advanced Nursing Studies, Wellington. **This study was combined with an observation tour of a variety of Maori Pre-School Centres, which are run by the Maori mothers. Following this and through the courtesy of W.H.O. and the Central Nursing School, Tamavua (Fiji) Miss Reid was also fortunate enough to observe various aspects of the Fijian Public Health Nursing Service while in that country. On her return to Western Australia she was appointed Nursing Supervisor, Public Health Field Nurses.

The *Child Health Sisters* and the Public Health Sisters held a combined conference at St. Catherine's College in August and the Public Health Nurses really appreciated having the opportunity to meet and talk with the Child Health Sisters. However, although they found the conference extremely interesting it did not meet their particular needs and they felt on returning to work they were not much better equipped to deal with their work problems. We should be able to prevent this situation from recurring in future by having some concurrent sessions that will deal with the relevant needs of both fields of nursing.

NURSING BURSARIES

Bursaries awarded in 1971 for intending nursing applicants to continue general education covering one year (fourth year High School) or two years (fourth and fifth years High School); or to complete the pre-clinical course (4th year level) at Mt. Lawley Technical School—are as follows:

1 year	8
2 years	104
pre-clinical course	15
Total	127

SCHOLARSHIPS AWARDED FOR POST GRADUATE STUDIES 1971

1.	College of Nursing (Aust.)	Melbourne
	Mrs. B. M. Dawson	Nursing Administration
	Mr. D. Owen	Nursing Administration
	Miss M. M. Gilligan	Public Health Diploma
	Miss M. N. Chidlow	Public Health Diploma
2.	College of Nursing W.A. Branch Hospital Nursing and Ward Management:	
	Miss S. M. Timms	Mrs. M. J. Kroeber
	Miss B. S. Graham	Miss E. M. Needle
	Mrs. J. McKenzie	Mrs. E. C. Isbister
	Mrs. G. D. Hutchins	Miss P. J. Hawes

NURSING PUBLICITY AND RECRUITMENT ACTIVITIES

Activities continued in the pattern of previous years, spreading information about opportunities in Nursing.

Visitations were made to schools ranging from Geraldton to the South West and East to the Goldfields, and information material was forwarded to the North West.

The Student Nurses' Association again offered assistance, and spoke to approximately 1,000 school students at ten schools during Student Nurse Week. This approach by young people to young people definitiely creates interest only surpassed by actual involvement in a hospital. A prospective applicant feels that entry to the hospital atmosphere is the "Ultimate" and I hope hospitals will make this increasingly available to interested persons.

Nursing displays were exhibited at the Kwinana Fair, Quairading, Midland Bunbury, Balcatta, Busselton, Cottesloe, Port Hedland Spinifex Spree (display organized by Port Hedland Hospital) and at "Careers in Action" at Fremantle (display organized by Fremantle Hospital).

News items were numerous throughout the year, and routine publications continued in various papers and magazines.

A new twenty minute film called "A Way of Life" was purchased to alternate with "To Nurse is to Care" and finance has been made available for the production of a one minute advertising film in 1972.

An Essay Competition was held for secondary school students titled "Nursing promotes the development of Personality". Sincere appreciation is extended to the Prize donors McRobertson Miller Airways, Joyce Brothers, International Paper Merchants and the Australian Medical Association. (The latter donation was reallocated to a similar project for 1972 with the primary schools.).

I wish to thank Mrs. L. H. Lewis for her excellent contribution to Nursing, in her position of Publicity and Recruitment Officer. Mrs. Lewis has been awarded a Florence Nightingale Scholarship and will be attending the College of Nursing (W.A.) Branch in 1972. We wish her every success.

GOVERNMENT SCHOOL OF NURSING

General Training

During this period, recruitment into General Training was as follows:—

Kalgoorlie Regional Hospital	12
Geraldton Regional Hospital	17
Northam Regional Hospital	9
Bunbury Regional Hospital	7
Transfers from Preliminary Training School to the Nursing Aide Course	4
Resignations from Preliminary Training School	—

Number of Students to complete General Training:—

Kalgoorlie Regional Hospital	9
Geraldton Regional Hospital	9
Northam Regional Hospital	7

Resignations from General Training:—

Kalgoorlie Regional Hospital	5
Geraldton Regional Hospital	9
Northam Regional Hospital	3
Bunbury Regional Hospital	1
Terminations	6

STAFF

Government School of Nursing

Miss M. Underwood—Nursing Education Diploma, F.C.N.A.	Principal Tutor
Miss W. P. Gardiner, Nursing Education Diploma	Senior Tutor, Appointed 18th January, 1971
Miss P. Smart	Tutor
Miss M. R. Baird	Tutor

NEW SCHOOL OF NURSING—BUNBURY

General training commenced at Bunbury Regional Hospital with the transfer of four student nurses from 107th Preliminary Training School on 26th June, 1971.

The new school was officially opened on Monday, 28th June 1971, and the Organizer of Nurse Training (Miss E. E. Harler) and the Principal Tutor (Miss M. Underwood) attended this function.

VISITS

Government School of Nursing staff visited Regional and Metropolitan Hospitals as follows:—

Miss E. E. Harler, Organiser of Nurse Training—

Bunbury Regional Hospital	15th and 17th June, 2nd November, 1971
Geraldton Regional Hospital	7th October, 1971
Kalgoorlie Regional Hospital	20th October, 1971
Northam Regional Hospital	27th October, 1971
Osborne Park Hospital	25th October, 1971
Bentley Hospital	29th October, 1971
Swan District Hospital	1st November, 1971.

Miss M. Underwood, Principal Tutor—

Bunbury Regional Hospital	15th June, 1971
Kalgoorlie Regional Hospital	16th–20th August, 1971
Northam Regional Hospital	27th September, 1971—1st October, 1971

Miss W. P. Gardiner, Senior Tutor—

Kalgoorlie Regional Hospital	17th–27th May, 1971
Northam Regional Hospital	31st May–11th June, 1971
Geraldton Regional Hospital	19th–29th July, 1971
Bunbury Regional Hospital	27th September, 1971—1st October, 1971

Miss P. Smart, Tutor, relieved at Bunbury Regional Hospital from 1st to 11th November, 1971.

Miss M. R. Baird, Tutor, relieved at Geraldton Regional Hospital from 11th January, 1971 to 5th February, 1971, and at Kalgoorlie Regional Hospital from 28th December, 1971 to 15th January, 1972.

POST BASIC ADVANCED COURSE IN CORONARY CARE

In collaboration with the Government School of Nursing, the National Heart Foundation of Australia (W.A. Division) conducted a Post Basic Advanced Course in Coronary Care at the School from 29th March, 1971 to 23rd April, 1971. The course was attended by thirteen (13) sisters from country and metropolitan hospitals.

SECONDMENT OF ROYAL PERTH HOSPITAL NURSES TO COUNTRY REGIONAL HOSPITALS

Commencing on 22nd March, 1971, student nurses who have completed Preliminary Training School at Royal Perth Hospital have been seconded from their hospital to the Regional Hospitals, at Bunbury, Geraldton, and Northam. Classes are divided into three groups and each group spends five (5) weeks in the country to undertake observation and instruction in child care and management. These students are also given the opportunity of observing a normal birth.

Student nurses from Royal Perth Hospital appreciate the opportunity of working in the country and readily adapt to the environment.

NURSING AIDE TRAINING

Number of Nursing Aides commenced training		205
Number of Nursing Aides passed Nurses' Board Examinations		118
Terminations	29	
Resignations	32	
	—	61
Transfers to General Training		5

Port Hedland District Hospital

Mrs. D. Dwyer—Clinical Instructor.

Three (3) Nursing Aide trainees commenced at Port Hedland on 1st September, 1971.

Derby District Hospital

Sister M. Giovanni, St. John of God Nursing Order, commenced a course of ten (10) full-blood aboriginal girls who were accepted as Nursing Assistants, on 15th April, 1971.

Every endeavour was made to bring these aboriginal girls up to the minimum educational requirements of the Nurses' Board of W.A. for Nursing Aide training, and they were allowed to have general education study in the classroom for one hour each day. Even with this extra tuition, none of these girls reached the required standard either in the practical situation or educationally and, by December, 1971, all Nursing Assistants had either been dismissed or terminated without notice because of unsatisfactory behaviour in the ward situation or in the Nurses' Home.

Miss J. Brann, Nursing Education Diploma, appointed in May, 1971 to replace Sister Giovanni, and observed at Mount Henry Hospital from 2nd to 11th June, 1971.

Visits

The Organizer of Nurse Training (Miss E. E. Harler) visited the following country hospitals:—

Derby District Hospital	26th and 27th May, 1971
Port Hedland District Hospital	28th May, 1971
Busselton District Hospital	16th June, 1971
Collie District Hospital	17th June, 1971
Narrogin Regional Hospital	3rd August, 1971 and 15th November, 1971
Albany Regional Hospital	4th August, 1971 and 17th November, 1971
Katanning District Hospital	5th August, 1971 and 16th November, 1971
Merredin District Hospital	26th October, 1971.

Clinical Instructors' Refresher Week

A refresher course for Nursing Aide training instructors was held at the Government School of Nursing from 23rd to 27th August, 1971, fifteen Clinical Instructors attending.

INTERVIEWS

During the period 1st January, 1971 to 31st December, 1971, 385 persons were interviewed by appointment. This number does not include the Nursing Bursars leaving school nor applicants for the Nursing Bursary.

There were also a number of casual interviews of schoolgirls and parents who called at the Government School of Nursing for nursing information.

I wish to express my appreciation to the staff of the Nursing Administration Section for their loyal assistance during 1971.

Appendix XII

Division of Occupational Health

D. D. LETHAM, M.B., B.S., B.A., B.Com., F.R.A.C.P., D.P.H., F.A.C.M.A.

Physician in Charge
Occupational Health Section

PNEUMOCONIOSIS AND MINING INDUSTRY

Mining Examinations

4,265 men were examined under the Mine Workers Relief Act. There were 353 suffering from pneumoconiosis, 15 of these were new cases of silicosis ; 4 were suffering from asbestosis but there were no new cases. Only one miner was found to be suffering from active pulmonary tuberculosis.

In addition to these men 5,989 new applicants were examined.

Pneumoconiosis Medical Board

160 applicants for assessment for compensation for pneumoconiosis were examined. 48 of these were new claimants. There were 4 new applicants for compensation for asbestosis attributable to mining at Australian Blue Asbestos.

There has been a continuous reduction in numbers of applicants over the last few years due to the implementation of changes in the Workers Compensation Act.

Other Dusty Trades

Sandblasting in the open continues to present serious health problems despite constant inspection and supervision, in association with Factories Branch Inspectors. There has been a significant reduction in the amount of dust and oil in the supplied air but it is doubtful if an industrial compressor could ever be maintained to supply consistently satisfactory " medical " air. Submissions have been made to the Department of Labour with a view to strengthening the Abrasive Blasting Regulations and to reduce the volume of metal which is to be cleaned in the open with sand. 77 sandblasters and their assistants were x-rayed during the year.

538 asbestos workers had chest x-rays. One applicant for Workers Compensation was a waterside worker who suffered extensive asbestosis and whose only exposure to asbestos had been during the transhipping of blue asbestos from the coastal vessels to overseas shipping at Fremantle. Unloading of asbestos cargoes has been inspected and certain improvements recommended have been effected.

237 foundry workers and 60 miscellaneous workers had chest x-rays.

Isocyanates

The firm manufacturing flexible polyurethane foam which had been experiencing considerable difficulty in previous years has now moved to new modern, well designed, premises at Jandakot. Air tests for free isocyanate in the atmosphere have been done and satisfactory low levels found. Lung Function Tests have been carried out on employees again and are satisfactory. Continuous supervision is still required.

Hearing Conservation Programme

Surveys in this field have been continued. There have again been many more enquiries relating to noise prevention in industry. Hearing protection is more readily accepted and it is obvious that there is much greater acceptance of ear muffs and plugs by employees. Unfortunately many companies seek advice on noise reduction at source, which is the only really satisfactory answer to excessive noise, but the Department is unable to be of much assistance in this regard.

Where possible surveys have been conducted, continuous educational programmes have been introduced, films and lectures, etc., have been used to assist the Hearing Conservation Programme.

271 coalminers in the Collie Coal Field had audiograms and a survey was done to determine hearing loss in railway engine drivers and firemen with 248 men being examined. The data from these is not yet analysed.

Hearing Conservation Programmes have been continued in the mining industry and there is high employee acceptance of the need to wear hearing protection. A total of 811 audiograms were done during the year. In addition to the above over 30 industries or factory premises were investigated.

First Aid

A number of companies have enquired for advice and assistance in the establishment of medical centres and selection of trained personnel. There is an obvious interest by management in the setting up of medical centres staffed by trained nurses and this should be encouraged. Advice has also been given on first aid requirements.

Dermatitis

Again formal notifications of dermatitis in industry are rare. Numerous enquiries have been received regarding the safe handling of chemicals likely to cause irritation or sensitisation and ten visits were made in connection with these enquiries.

There was a suggestion earlier in the year that nickel was frequently the cause of dermatitis in the nickel mining industry and an investigation was carried out. In no instance was nickel confirmed as a cause of the dermatitis ; other factors associated with the industry were implicated.

Recommendations were made to improve the situation and at a follow-up no cases of dermatitis have been reported over a two month period.

In all a total of 350 visits were made to factories and industry in pursuing routine enquiries, hearing conservation programmes, etc., by Sister Wilkinson.

Kinetics

Hospitals. Lecture/demonstration Services were continued at the Government School of Nursing, Mt. Henry, Albany, Bunbury and Manjimup Hospitals. Royal Perth Hospital has joined the regular users of this service for both General Trained and Nursing Aide students. A series of demonstrations were given at Bethesda and St. Georges Hospitals. Liaison with Silver Chain continued.

Accidents. Analysis of work-caused injuries to hospital staffs continued. A method of introducing standard Industrial Safety Organisation into Government Hospitals has been suggested. This department was involved in the formation of the Metropolitan Hospitals Productivity Group and responsible for the Group's current activity which is research into the causes of accidents to hospital staffs with a view to the eventual introduction of a Safety Programme and training.

Industry. Both Government instrumentalities and private industry continue to request assistance in the field of Manual Handling education. These include W.A.G.R., Alcoa, Balm Paints, Forward Downs, Main Road Department, and Great Southern Flour Mills.

A series of lectures have been given to groups with specific interests such as Members of the Institute of Radiotherapy, Trainee Canteen Supervisors, Firms handling Pesticides, Private Hospitals Association, Occupational Therapy Association.

Apparatus. Counters for both the Fremantle and Perth Chest Clinics were designed, as was a desk for the Geology Department of the W.A. University.

A wheeled arm-chair designed to permit patient transfer with minimum strain was designed. This was adopted for production by a local firm.

The testing of non-lift patient handling methods at Northam Hospital was commenced. After three months of encouragement in the use of mechanical aids, a year will elapse before their current use will be assessed.

Pesticides and Fumigants

Five commercial fumigating firms were registered and 25 employees licensed to carry out fumigation work. Another 22 men in industry were licensed to carry out their own fumigation work. During the year 25 ships were fumigated with methyl bromide. Of these 15 were at ports other than Fremantle. Approximately every second fumigation at Fremantle was checked to ensure that operations were conducted in a satisfactory manner.

In October the Pesticide Regulations were amended to provide for the registration of commercial pest control firms and the licensing of operators. Arrangements were made for this to be done early in 1972.

The usual supervision of employees engaged in formulating and packaging pesticides was carried out and where it was considered necessary tests were carried out to determine absorption of chemicals.

Blood tests were carried out on men exposed to pesticides at the Ord River, where highly toxic organo-phosphorus and organo-chlorine chemicals are in use from time to time.

Lead Workers

Tests and supervision of men engaged in work involving exposure to lead were carried out with the co-operation of the Departments of Labour and Mines. Throughout the year 144 urine tests were arranged through the Government Chemical Laboratories. In addition an increasing number of blood tests were arranged through the State Health Laboratories. Elevated urine/blood lead levels were found in battery, plastics and mining industries, but there were no instances of poisoning.

Arsenic

Assistance was given in the investigation of two non-industrial cases of arsenic poisoning.

Perchloroethylene

Air tests in premises where perchloroethylene dry cleaning is carried out indicated that a minimal health danger from vapour exists if the plant is properly adjusted and working correctly. The need for the public to aerate dry cleaned clothing, particularly prior to removal in a vehicle was stressed at premises visited.

Miscellaneous

Queries on welding fumes in unusual situations were resolved by Government Chemical Laboratory tests.

Ozonising instruments were investigated to ascertain suppliers, and the main purchasers. Some tests were made to measure ozone levels in hospital situations. Some concern is still felt about the use of these machines in the home to dispel smells and odours. It seems likely that ozone acts only by paralysing the olfactory end organs, it is radio-mimetic and its mutagenic power has been stated to be higher than that of radiation.

A number of swimming pools were inspected to ensure that emergency equipment for protection against a chlorine escape was adequate. During the year two courses for swimming pool managers were held at National Safety Council to train unqualified men to the requirements of the Swimming Pool Regulations. This is expected to become an annual arrangement with Occupational Health staff supervising the courses and helping in examinations.

CLEAN AIR SECTION

The activities of the Section are included under the following headings:—

A.—MONITORING FOR AIR POLLUTANTS.

B.—SPECIFIC INVESTIGATIONS AND TESTING.

C.—ADVISING ON AIR POLLUTION CONTROL AND INVESTIGATING COMPLAINTS.

D.—EDUCATION.

E.—STATUTORY DUTIES.

A. MONITORING FOR AIR POLLUTANTS

1. *Dust monitoring*

Although complaints of dust have been received on a frequency similar to preceding years, the monitoring activities in this field have been reduced. Increases in other monitoring activities, such as for sulphur dioxide and motor vehicle pollutants, have necessitated a redistribution of staff. Some of the time previously absorbed in dust monitoring has been shared with other activities.

The Central Electricity Research Laboratory directional dust gauge is used for dust monitoring. This has the advantage that the source of the dust can be located directionally, that is to say, in a northerly, easterly, southerly or westerly direction. Furthermore, samples of the collected dust can be analysed for specific components which again can be related to the direction of the source.

Dust concentrations are expressed in units which represent the obscuration of light by the dust, and which are related to dirtiness which is the complaint-provoking factor.

Perth area

During 1971 the number of dust gauges sited in the Perth metropolitan area was reduced from 21 to 19. Complaints of dust from sandblasting from residents nearby to the special industries area at Jandakot prompted the installation of four dust gauges adjacent to this area.

The Kwinana works of an iron and steel company initiated a study of dust levels in and around Kwinana. The company installed four CERL gauges late in 1971, and the section is carrying out the laboratory assessment of the dust levels for the company

The location of the Public Health Department CERL gauges as at December, 1970 and December, 1971 were:—

December, 1970—	December, 1971—
City Beach	City Beach
East Perth	East Perth
Lathlain Park	Lathlain Park
Welshpool (2)	Welshpool (3)
Kewdale (10)	Kewdale (3)
Perth Airport	Perth Airport
Naval Base	Naval Base
Maddington (2)	Maddington (2)
Gosnells	Gosnells
Midland	Rivervale
	Jandakot (4)

For results see Appendix A.

Port Hedland

Complaints of dust from the two iron ore stock-pile sites in Port Hedland were numerous during 1971. Officers from the Section visited Port Hedland on six occasions during the year. An iron ore exporting company's port area management at Port Hedland requested assistance from the Section in monitoring the dust emissions at different elevations over the stockpile area. This project was initiated by the Section, but during the latter months of the year the entire monitoring of iron ore dust on this company's property was handed over to the company staff. The acute staff shortage in the Clean Air Section meant that if this project was maintained by the Section, other important monitoring activities would suffer. Eleven gauges throughout the town of Port Hedland and Finucane Island are still being maintained by the Section. Mr. R. Britten, Health Surveyor, Shire of Port Hedland, collects the dust samples from these eleven gauges and forwards them to the Section's laboratory in Perth for processing.

At December, 1971 the dust gauges are sited in Port Hedland as follows:—

Gauge No.	Location
1	P.W.D. yard, opposite Police station, almost town centre.
2	Water tank, Home Street, opposite hospital.
3	Water tank, Spinifex Hill, adjacent to Shire Offices.
4	Navigation beacon—Cooke Point.
5	Transportable house—100 yards south of Leslie Salt Office at salt pans.
6	On old Utah dredge site, Finucane Island.
7	Near tennis courts, Finucane Island.
8	West side of island, near ocean beach, Finucane Island.
9	P.W.D. sewerage pumping station, north end of South Hedland.
10	Port area, mounted on light stand, approximately 65 ft. above ground, Port Hedland town.
11	Drive-in theatre near Spinifex Hill.

For results see Appendix B.

Gauge 11 at the Drive-in, was installed to monitor manganese ore dust blown from large manganese ore stockpiles nearby. Water sprayed over the stockpiles following advice from officers from the Section has significantly reduced the dust problem. Analysis of the collected dust samples from this site has shown the manganese ore content of the dust, expressed as MnO_2, to average approximately 0·7 per cent. through 1971.

Cape Lambert

The four dust gauges at Cape Lambert were maintained during 1971. Increased activity in the Cape area due to road building, town development and port area construction combined to create higher dust levels.

Gauge No.	
1	Port area, Point Samson.
2	Immediately South of Port Area, Cape Lambert.
3	North of Wickham Townsite.
4	South of Wickham Townsite.

For results see Appendix C.

Esperance

Ship loading of nickel ores in the Esperance Port Authority area gave rise to complaints of nickel dust affecting town residents and alleged damage to trees along the ocean front. In May the Section installed four dust gauges in the port area and residential areas to monitor the dust. The dust samples collected each month are examined for nickel content.

For results see Appendix D.

Country Areas

Further investigations and measurements in timber waste disposal methods (see later reference) allowed the removal of the dust gauges at Nannup and Boyup Brook. Although the problem of timber waste disposal at a sawmill in Manjimup has still not been resolved, it is anticipated that a conical burner will be installed at this mill to confine the sawdust during combustion and prevent further nuisance. Until the sawdust emissions are reduced, the dust gauge at Manjimup will be maintained.

Chemical analyses on dusts have been carried out by the Government Chemical Laboratories.

2. Sulphur dioxide and particulate monitoring

Perth area

The Air Pollution Control Council approved a plan for monitoring sulphur dioxide and particulates early in 1971. Diagram 1 shows the location of nearly 50 existing and proposed sampling stations radially linked with Kwinana, superimposed on a map of Perth suburbs from Wanneroo to Rockingham, and Armadale to Mundaring. The State Electricity Commission is co-operating with the Clean Air Section in the monitoring programme. The purposes of this particular monitoring system are three-fold:—

Primarily—

1. To monitor the ground level concentrations of sulphur dioxide in urban areas of relatively high population density.
2. To assist the Air Pollution Control Council in the future planning and siting of industry in the Kwinana area.
3. To monitor for particulates, smoke, etc., in the atmosphere to obtain information on persistent smoke sources.

Wind data will be supplied by the Bureau of Meteorology, enabling detailed analyses of the distribution of pollutants from the Kwinana area to be made in future years.

During 1971 the four monitoring sites at Bentley, Perth, Jandakot and Medina in operation through 1970 were maintained. At the request of the Bayswater Shire Council monitoring was commenced at Bayswater in June. The first three sampling stations on the new plan were installed in the latter months of 1971. I wish to thank the residents of many areas who have volunteered to assist the Section in housing and operating these sampling stations. For results see Appendices E and F.

Kalgoorlie

Following the announcement of the proposed construction of a large nickel smelter near Kalgoorlie, the Air Pollution Control Council requested monitoring of the air in Kalgoorlie for sulphur dioxide to establish background levels prior to operation of the smelter. During September permanent monitoring was commenced at a site near the centre of the town.

For results see Appendix G.

3. Motor vehicles

The policy for city surveys and monitoring of pollutants has been set for—

(1) Driver exposure tests, taken with mobile recording instruments in peak period traffic.

(2) Pedestrian exposure tests—measured on the footpath at locations throughout the city (see diagram 2) and Appendix H.

(3) 24 hour exposure tests—measured in the city at 57 Murray Street, Perth. See Appendices I and J.

Driver exposure tests have not been regularly undertaken as it is considered that peak period traffic densities rarely exceeding 2,000 vehicles per hour do not require intensive checking. Readings obtained during driver exposure tests show in the morning peak period over the two hours 7.30 a.m. till 9.30 a.m. an average carbon monoxide concentration of 25 parts per million and in the evening peak period from 4.30 p.m. till 6.30 p.m. an average of 45 parts per million. In addition to carbon monoxide and nitrogen oxide determinations, lead and polynuclear aromatic hydrocarbons were monitored during the pedestrian exposure tests (Appendix H). Benz-pyrene in the city streets, as an indicator of the total polynuclear aromatic hydrocarbon content of the atmosphere in the city block, has been mentioned. Experience in other states and overseas points to benz-pyrene being the major constituent of this group.

Lead was also determined on a regular basis in the 24 hour particulate samples collected at 57 Murray Street, Perth. The yearly average for lead in air was 0·9 micrograms per cubic metre, while the maximum 24 hour level was 1·8 micrograms per cubic metre and the lowest 24 hour level was 0·3 micrograms per cubic metre.

Equipment for measuring total hydrocarbons in the atmosphere has been ordered and should be in use next year.

B. SPECIFIC INVESTIGATIONS AND TESTING

1. Dust

(1) Sawdust and sawdust char from incinerators.

Further testing of conical burners was carried out during the last year. From previous experience the staff of the Section were of the opinion that the control of emissions from conical burners depend upon the size of the burner, relative to the amount of wood waste being consumed. By either operating a burner on reduced load, or oversizing the burner for the anticipated load of wood waste, emissions of sawdust and char can be reduced to acceptable levels. Trials were conducted on such a burner at Collie with the assistance of the Management of the mill. Three members of the staff of the Section manhandled approximately 12 tons of sawdust and wood from the conveyor feed to the burner representing a 20 per cent. decrease in load to the burner. The following day they returned the waste to the burner in addition to the normal loading, at an accelerated rate giving a 33 per cent. increase on normal loading. Emission measurements on this limited testing verified the opinion of the Clean Air Staff.

For results see Appendix K.

The emissions from another conical burner which on previous testing, had exceeded the acceptable 0·2 grains per cubic foot, was measured on two occasions and found to be within the limit. Following the early tests which verified the nuisance, the company installed a separate collection system to trap the fine sawdust which previously was difficult to burn, and was partially burnt, and emitted from the conical burner. The tests conducted during 1971 proved the effectiveness of the new collection system.

(2) Dust from a bitumen plant.

A city council required assistance in determining the size of dust particles being emitted from their bitumen plant prior to calling tenders for a new dust suppression system. Samples of the dust were collected and the size distribution of the dust performed for the city council.

2. Fluorine

The emissions of fluorides from six superphosphate manufacturing works were measured. Persistent complaints of damage to vegetation and possible effects to livestock were received from a neighbour of one superphosphate works. A special investigation conducted by the Department of Agriculture, Government Chemical Laboratories and the Public Health Department was initiated to assess the effects of any fluoride emitted from the works. Bi-monthly sampling of leaves from trees and pasture surrounding the works was carried out in conjunction with measurements of the fluoride emission from the works.

For results see Appendix L.

3. Miscellaneous

Many brief investigations for Government Departments and private firms were conducted during the year. Such investigations were determining the dust levels in a computer room, the determination of carbon monoxide levels in heated horticultural nurseries, and assessing the efficiency of pollution control devices.

C. ADVISING ON AIR POLLUTION CONTROL

Complaints

Telephoned and written complaints were received in numbers far exceeding those of previous years. An increasing number of these calls result from an increasing public awareness of air pollution sources and effects. On investigation the majority of the complaints were found to be justified.

It is now more obvious than ever that most complaints arise from the unfortunate siting of certain industries relative to nearby residential areas. Such industries, notwithstanding maximum effort to control emissions from time to time, are a genuine source of complaint for nearby residents.

Advice

Many hundreds of enquiries were received by the Section from members of the public and students for information and material for projects.

D. EDUCATION

Lectures were given to the following bodies during the year:—

Institute of Health Surveyors
Institute of Engineers
Medical Students.

E. STATUTORY DUTIES

During the year there were 14 meetings of the Scientific Advisory Committee, of which the Physician in Charge of the Division is Chairman. The Senior Engineer (Clean Air) and the Scientific Officer (Clean Air) supported by two Technical Officers have prepared numerous reports for the Committee.

Inspections of premises by these officers have been carried out as required by the Scientific Advisory Committee. The Senior Engineer (Clean Air) is the State representative on the Air Pollution Sub-Committee of the National Health and Medical Research Council.

STAFF

Occupational Health Section

Dr. J. C. McNulty, Physician Occupational Health, was absent on study leave for most of the year; and is to be congratulated on obtaining the Diploma of Public Health at Sydney University. Through the goodwill of Dr. F. G. B. Edwards, the Director of Tuberculosis Control, Dr. F. Heyworth ably acted in his absence as Physician. With the full support of other members of the Section it was possible for him to do this on a part-time basis.

Clean Air Section

Early in the year Mr. R. C. Crowe was appointed as a Technician, increasing the staff of the Section to four. There is now an urgent need for the appointment of another Scientific Officer at the earliest opportunity to meet the requirements of an ever expanding monitoring system. Additional laboratory staff are also urgently required to release the scientific and technical staff from routine laboratory duties.

During the year the Section has continued to expand its activities and increase its work load to keep pace with the planned development of the Section. The staff have continued to work willingly and enthusiastically many hours outside their usual hours.

FIGURE 1

SULPHUR DIOXIDE AND PARTICULATE MONITORING SITES

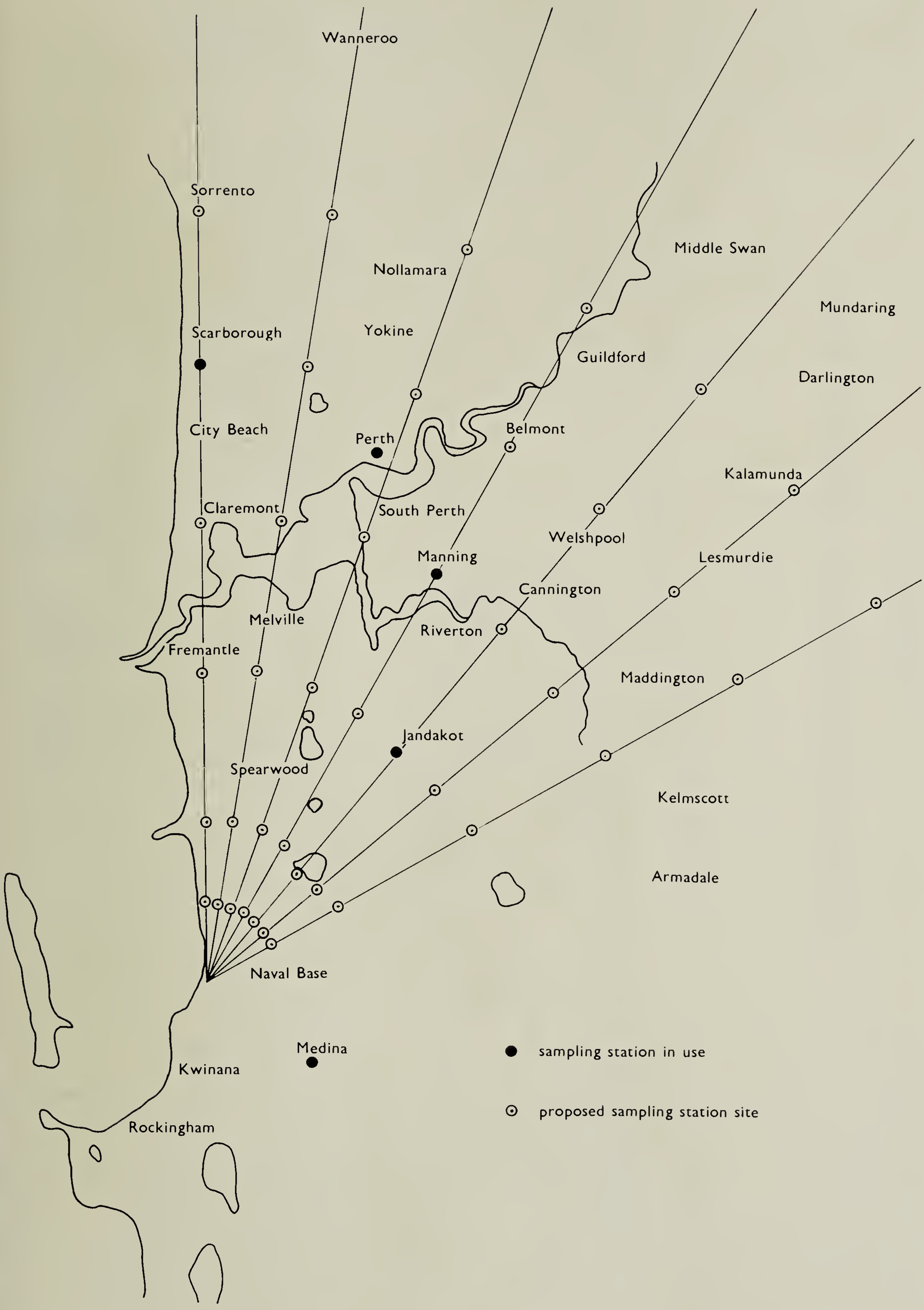
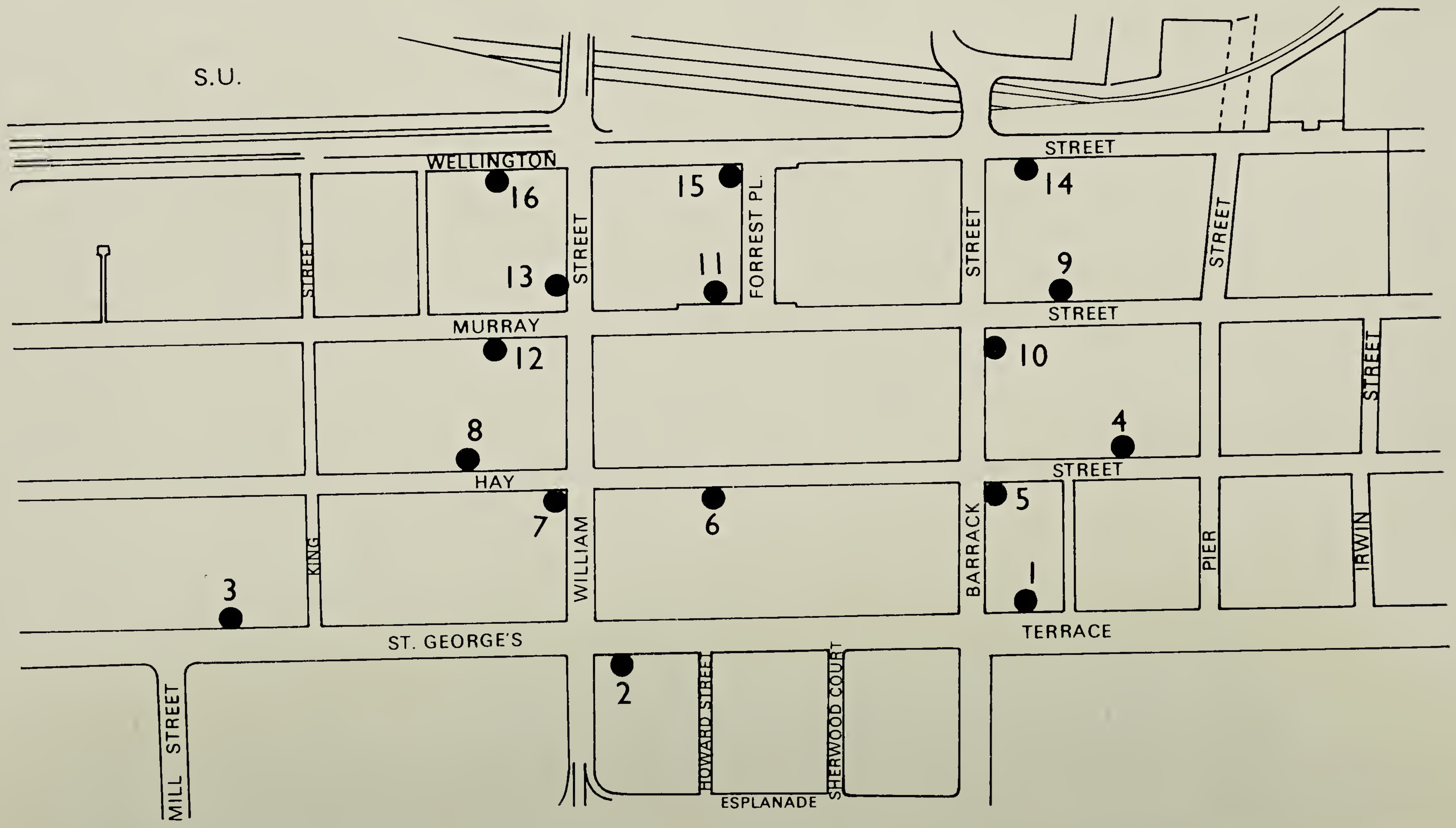


FIGURE 2

PEDESTRIAN EXPOSURE TESTING SITES



Appendix A

Dust Testing Programme—Perth Metropolitan Area 1971

Mean total dirtiness for the twelve month period January–December, 1971.

Gauge	Total Dirtiness
City Beach	2·0
East Perth	2·2
Lathlain Park	2·1
Welshpool 1	3·3
Welshpool 2	3·5
Welshpool 3	3·5
Kewdale 1	6·8
Kewdale 2	3·7
Kewdale 3	4·7
Perth Airport	2·9 (8)
Naval Base	6·7
Maddington 1	2·7
Maddington 2	6·0
Gosnells	4·1
Rivervale	3·4 (9)

(Figures in brackets indicate months gauge in operation, as less than twelve months.)

Appendix B

DUST TESTING PROGRAMME—PORT HEDLAND 1971

Gauge	Jan.		Feb.		March		April		May		June	
	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%
1	*	....	16·4	36	28·1	....	31·7	77	18·1	....	34·1	60
2	*	....	8·1	15	14·8	....	7·1	38	6·7	....	7·2	38
3	*	....	10·9	5	9·8	....	4·3	14	2·5	....	5·7	17
4	*	....	10·9	6	5·1	....	3·2	9	25·7	....	5·2	7
5	26·2	....	10·7	6	11·9	....	3·2	10	2·6	....	4·8	9
6	*	....	....	....	....	....	....	....	32·2	....	43·3	72
7	41·4	....	6·7	10	6·6	....	5·9	44	4·7	....	5·6	30
8	14·1	....	8·7	14	8·7	....	10·2	67	10·9	....	32·6	65
9	....	....	....	....	....	....	....	....	4·4	....	2·7	4
0	....	....	....	....	....	....	....	....	....	....	....	....

1971—continued

Gauge	July		Aug.		Sept.		Oct.		Nov.		Dec.	
	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%
1	15·7	....	11·5	44	17·3	....	29·2	59	19·8	....	17·5	45
2	4·5	....	5·6	31	10·3	....	13·0	57	**	....	10·6	46
3	2·2	....	2·9	7	7·2	....	14·5	24	3·8	....	13·6	44
4	2·6	....	1·9	8	2·8	....	5·6	11	2·7	....	6·0	16
5	1·2	....	1·8	5	2·3	....	3·3	35	3·5	....	3·7	25
6	**	....	**	....	22·5	....	9·9	61	6·5	....	12·5	60
7	3·3	....	4·9	26	5·7	....	11·4	35	4·8	....	8·1	26
8	17·9	....	8·2	31	12·4	....	11·9	62	4·7	....	6·4	41
9	1·6	....	2·5	5	3·9	....	8·9	4	3·6	....	3·8	4
0	....	....	....	....	....	....	30·5	69	16·1	....	19·6	58

% = per cent. iron ore in total dust from gauge   * = lost in cyclone   ** = damaged   T.D. = total dirtiness.

Appendix C
DUST TESTING PROGRAMME—CAPE LAMBERT 1971

Gauge	Total Dirtiness											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3·5	15·3	5·0	6·2	4·9	8·6	7·2	3·9	9·2	9·4	4·9	*
2	11·9	28·4	13·6	5·5	3·3	32·5	6·1	2·5	9·1	10·6	9·3	3·0
3	3·4	9·3	5·6	1·6	2·3	10·6	3·9	1·6	2·2	2·9	7·2	8·6
4	1·9	7·2	2·8	1·9	2·0	2·7	2·7	2·2	2·2	1·7	4·9	2·8

* portion of the sample lost.

Mean Total Dirtiness for the twelve month period.

Gauge number	1	2	3	4
Total Dirtiness	7·1	11·3	4·9	2·9

Appendix D
ESPERANCE PORT AUTHORITY DUST SURVEY 1971

Gauge	May		June		July		Aug.		Sept.		Oct./Nov.		Dec.	
	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS
1 W	3·1	0·32	0·8	1·68	0·7	0·54	0·9	1·00	3·9	0·18	6·7	1·32	14·7	6·00
S		1·41		1·45		1·14		2·82		0·54		3·59		5·18
E		1·00		7·86		1·32		2·86		2·82		4·18		0·36
N		0·36		1·63		0·86		1·91		0·73		3·22		5·32
2 W	3·3	0·18	0·9	0·27	1·2	0·14	....	....	6·9	0·23	2·4	0·32	2·6	1·23
S		0·18		0·32		0·32		....		0·27		0·50		1·23
E		0·32		0·68		0·45		....		0·41		2·41		2·91
N		0·09		0·36		0·36		....		0·27		0·54		4·04
3 W	2·2	0·27	0·4	0·23	0·8	0·14	....	....	3·9	0·09	1·6	0·23	2·1	0·32
S		0·36		0·14		0·18		....		0·09		0·77		1·27
E		0·36		0·68		0·23		....		0·04		1·18		2·09
N		0·14		0·23		0·14		....		0·14		0·45		0·64
4 W	2·7	0·23	0·5	0·05	0·8	0·18	0·8	0·32	....	....	4·9	0·04	2·4	0·14
S		0·32		0·32		0·09		0·14		....		0·04		0·14
E		0·23		0·32		0·23		0·23		....		0·09		0·50
N		0·14		0·23		0·05		0·32		....		0·04		0·18

T.D. = Total Dirtiness %NiS = % 2FeS NiS Pentlandite.

The east collectors of each gauge (1E, 2E, 3E and 4E) face the port nickel ore storage and ship loading area.

NOTE.—The collector 1E in December 1972 contained an excessive quantity of wind blown beach sand, hence reducing the percentage of nickel sulphide in the collector.

Appendix E
METROPOLITAN SULPHUR DIOXIDE CONCENTRATIONS 1971
(Results are all expressed in microgrammes per cubic metre)

Monthly averages

	Perth	Bentley	Jandakot	Medina	Bayswater	Kardinya Park	Wattleup	Wembley Downs
January	30	26	22	2	....	....	....	....
February	37	9	26	4	....	....	....	....
March	43	21	29	8	....	....	....	....
April	32	14	15	8	....	....	....	....
May	16	5	8	5	....	....	....	....
June	25	12	10	7	11	....	....	....
July	21	14	16	12	10	....	....	....
August	19	11	11	5	11	....	....	....
September	15	4	4	20	4	....	....	....
October	12	8	14	17	9	....	....	6
November	15	5	15	10	10	16	21	9
December	28	11	13	3	11	16	....	10

Yearly averages

	Perth	Bentley	Jandakot	Medina	Bayswater*
Yearly average	24	11	15	8	10
Highest 24 hour average	96	52	73	46	25
Lowest 24 hour average	0	0	0	0	0

* in use seven months only.

Appendix F

METROPOLITAN PARTICULATES (SMOKE) CONCENTRATIONS 1971

(Results are all expressed in microgrammes per cubic metre)

Monthly averages

	Perth	Bentley	Jandakot	Medina	Bayswater	Kardinya Park	Wattleup	Wembley Downs
January	6	4	2	1	....	....	....	....
February	7	5	6	2	....	....	....	....
March	10	4	4	3	....	....	....	....
April	20	11	9	....	....	....	....	....
May	19	12	9	2	....	....	....	....
June	21	13	8	6	13	....	....	....
July	19	12	5	4	15	....	....	....
August	20	7	2	3	12	....	....	....
September	10	7	2	1	8	....	....	....
October	7	6	3	3	6	....	....	4
November	4	4	1	3	5	2	2	2
December	9	7	2	4	10	3	....	3

Yearly averages

	Perth	Bentley	Jandakot	Medina	Bayswater*
Yearly average	12	8	4	3	11
Highest 24 hour average	62	32	34	28	38
Lowest 24 hour average	0	0	0	0	2

* in use seven months only.

Appendix G

KALGOORLIE SULPHUR DIOXIDE CONCENTRATIONS 1971

(Results are all expressed in microgrammes per cubic metre)

	October	November	December
Monthly average	21	21	13
Highest 24 hour average	140	93	106
Lowest 24 hour average	0	0	0
Highest one hour average	720	610	610
Lowest one hour average	0	0	0

Appendix H

PEDESTRIAN EXPOSURE TESTS 1971

Date	Site	Carbon monoxide			Nitrogen oxides	Lead	Benz-pyrene
		10 hour average	maximum hourly average	minimum hourly average	10 hour average		
		parts per million			micrograms per cubic metre	micrograms per cubic metre	micrograms per 1,000 cubic metres
23/4/71	1	6	9	4	25	1·2	....
30/4/71	3	10	28	6	57	2·1	....
18/5/71	4	11	17	8	48	0·2	....
11/6/71	5	21	41	12	29	4·3	....
9/7/71	1	15	25	10	153	5·3	....
15/7/71	15	18	34	10	125	3·9	....
23/7/71	8	8	11	6	29	3·5	....
30/7/71	7	17	26	12	105	4·4	....
6/8/71	11	1	2	0	29	2·7	....
13/8/71	9	8	13	4	48	5·6	....
19/8/71	6	4	6	3	38	2·7	....
16/9/71	13	17	25	9	96	10·8	....
30/9/71	1	17	20	13	125	2·7	less than 0·1
20/10/71	4	5	20	3	38	4·0	less than 0·1
29/10/71	14	12	18	8	81	7·2	0·4
11/11/71	8	2	3	1	69	1·0	less than 0·1
25/11/71	9	7	9	6	77	....	....

Appendix I

24 HOUR EXPOSURE TESTS TAKEN AT 57 MURRAY STREET, PERTH 1971

(Carbon monoxide—results expressed in parts per million)

	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly average	3·7	3·8	4·3	3·6	3·9	3·8	1·8	2·6	2·7	2·0	3·1
Highest 24 hr. average	4·8	5·8	7·7	5·6	7·7	4·8	3·7	5·0	4·4	3·3	5·3
Lowest 24 hr. average	3·3	2·6	2·7	1·7	2·0	1·8	0·3	0·6	1·3	0·7	1·3
Highest 1 hr. average	6·0	18·0	12·0	13·0	13·0	12·0	9·0	9·0	10·0	7·0	4·0
Lowest 1 hr. average	1·5	1·5	1·0	1·0	1·0	0·5	....	....	....	....	1·0

Yearly average 3·2 (eleven months)

Appendix J

24 HOUR EXPOSURE TESTS TAKEN AT 57 MURRAY STREET, PERTH 1971

(Nitrogen oxides—results expressed in microgrammes per cubic metre)

	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly average	19	31	15	15	17	12	13	12	23	25
Highest 24 hour average	20	46	29	27	23	19	20	22	46	36
Lowest 24 hour average	17	19	6	8	11	6	10	6	2	13

Yearly average 19 (ten months)

Appendix K

VARIABLE LOADING DUST EMISSIONS TESTS ON TEE-PEE BURNER AT A TIMBER MILL, COLLIE

Time	Normal loading 15/6/71			Reduced loading (by approx. 20%) 16/6/71			Increased loading (by approx. 33%) 17/6/71		
	Sampling time	Smoke emission	Dust emission (gr/cu. ft.)	Sampling time	Smoke emission	Dust emission (gr/cu. ft.)	Sampling time	Smoke emission	Dust emission (gr/cu. ft.)
800									
900							831 931	light	0·16
1000				932 1032	light	0·06	943 1043	medium dense	0·20
1100	1126 1156	light	0·11	1051 1151	light	0·10	1058 1158	medium dense	0·31
1200									
1300									
1400	1336 1436	light	0·08	1315 1415	light	0·12	1319 1419	light	0·13
1500	1454 1554	light	0·18	1431 1531	light	0·18			
1600									
1700	1618 1718	light	0·09						
	Average 0·12			Average 0·12			Average 0·20		

Appendix L

EMISSIONS OF FLUORIDE FROM SUPERPHOSPHATE WORKS

	Kwinana	Bayswater	Bunbury	Albany	Geraldton*	Esperance
Average emission over 24 hours at maximum production (pounds per hour)	0·9	0·4	0·6	0·1	28	4·5
Maximum hourly emission (pounds)	0·9	0·4	1·5	0·2	60	8·5
Minimum hourly emission (pounds)	0·9	0·4	....	....	....	....

* The Geraldton superphosphate works does not have a scrubbing system. Such a system is proposed for installation in 1972.

BI-MONTHLY TESTING OF EMISSIONS OF FLUORIDE AT A SUPERPHOSPHATE WORKS AT BUNBURY

	Average emission over 24 hours at maximum production (pounds per hour)	Maximum hourly emission (pounds)
August	0·8	2·0
October	0·4	1·2
December	0·8	1·5

Appendix XIII

State X-Ray Laboratory

B. E. King, M.Sc., B.Sc. Physicist-in-Charge

The primary function of the Physics Division of the State X-Ray Laboratory is the control of radiation hazards in medicine, dentistry, research and other areas. This control is exercised through the Radioactive Substances Act and through a broad programme of education and assistance to users of radiation.

RADIOACTIVE SUBSTANCES ACT

The Act requires that X-ray equipment used by Medical Practitioners or Dentists for the production of radiographs be registered and that users of all other X-ray equipment and of radioactive substances be licenced. A licence or registration is granted by the Minister for Health on the advice of the Radiological Advisory Council, a committee of experts appointed under the Act and representing professions with special knowledge in the uses and effects of radiation. The Council is chaired by Dr. D. D. Letham, Physician-in-Charge, Occupational Health and it is advised on medical and dental matters by two advisory sub-committees. The State X-Ray Laboratory provides technical, secretarial and other administrative facilities for the implementation of the Act. During 1971, the Council held five meetings, the Medical Committee six and the Dental Advisory Committee one. Table 1, shows particulars of licences and registrations for 1971.

Table 1

LICENCES AND REGISTRATIONS

Licences current at 31*st December*, 1971—	
Medical and Dental	127
Non-Medical	113
Combined Medical and Mon-Medical	4
Total	244
Net increases in licences in 1971	29
Registrations current at 31*st December*, 1971—	
Medical	41
Dental	197
Total	238
Net increase in Registrations in 1971	18

During 1971 the number of licences increased by 13·5 per cent. and registration by 8 per cent. However, the usage of X-rays and radioactive substances in the State is increasing by a greater factor than these figures indicate since some licences represent a large number of X-ray units and radioactive sources and each year there are many new items added to existing licences.

The Radioactive Substances Act was first passed in 1954 when there was little experience either in Australia or overseas on legislative control of the use of radiation. A number of shortcomings in the Act have led to difficulties in achieving satisfactory standards of safety in some areas of radiation usage and this was particularly apparent during 1971. The Council has closely examined the Act and is making recommendations for its revision. It has always been the policy of the Council to endeavour to obtain the co-operation of licencees and registrants without having to invoke the penalties provided in the legislation.

In 1971, it was necessary for the first time to prosecute a licencee for non-compliance with a regulation. Another licence was suspended following the licencee's failure to comply with the licence conditions. Both of these were in the field of industrial radiography.

EDUCATION

Training in the applications and safe use of radiation still remains unsatisfactory in many professions and with further increases in the use of radioactive substances in industry and a rapid growth of nuclear medicine, there was a continued need for special courses of training. The following short courses were presented by the Staff of the Laboratory in 1971, with a total student enrolment of 73 :—

Radiation Safety in the use of radiation gauges in industry. (Three courses).
Safe handling of unsealed radioactive isotopes. (Two courses).
Nursing of patients being treated with radioactive substances. (Two courses).

The laboratory staff assist the Institute of Technology, Mount Lawley Technical College, the Sir Charles Gairdner Hospital's School of Nursing, the Perth Dental Hospital and the Leederville Technical College, by lecturing on radiation safety topics as part of the training of the following groups :—

Diagnostic Radiographers.
Health Surveyors.
Health Technologists.
Dental Nurses.
Hospital Nurses.
Veterinary Nurses.

Lectures were given to a meeting of the Institute of Fire Engineers and to a week-end seminar of Public Health Service Dentists, held at Port Hedland.

FILM BADGE RADIATION MONITORING SERVICE

The Film Badge Service provides a valuable means of assessing the amount of radiation to which users of X-rays and radioactive substances are exposed in the course of their work. The service has been conducted by the Laboratory for 14 years and in 1971, 19,886 monitoring films were processed and the doses evaluated. The number of persons monitored increased by 15 per cent. over the number in 1970. Table 2 shows the number monitored in various occupational groups.

Table 2

NUMBER OF PERSONS USING FILM BADGE MONITORING IN 1971 SHOWN BY EMPLOYER GROUPS

Medical, Hospitals	264
Medical, General Practitioners	107
Medical, Radiologists and Miscellaneous	82
Chiropractors	21
Dentists	795
Non-Medical	506
Total	1,775

INSPECTION SERVICES

The regular inspection of radiation installations helps to maintain radiation exposure of personnel at a low level and minimises the possibility of a serious radiation accident. In addition to inspecting the facilities and safety procedures, the Inspectors assist those concerned to make more effective use of radiation by advising on areas within their competency, such as medical radiography.

The location of some hospitals and industrial establishments in remote areas still remains a severe obstacle to the carrying out of regular inspections. In 1971, eight country tours were made, three by air. Over 140 inspections were made of medical and dental facilities and over 100 of non-medical installations.

In addition a number of X-ray units and many items of equipment incorporating radioactive substances are inspected each year at the laboratory.

RADIATION MONITORING EQUIPMENT

The Laboratory is equipped with a range of monitoring instruments for the field measurements of alpha, beta and gamma radiation. Individual instruments are, in general, only suitable for specific types of radiation over a limited range of energies. The capabilities of the Laboratory have been extended by the acquisition of a low energy X-ray survey meter which is to be used for monitoring X-ray analysis equipment, colour television receivers, high voltage electrical equipment, gas filled discharge tubes, etc. The instrument is shielded against the radio-frequency radiation which may be produced by some types of equipment and which can interfere with the operation of a survey meter.

RADIATION STANDARDS

The Laboratory maintains a sub-standard X-ray Dosemeter and standard Radioactive Sources, to permit calibration of a wide range of monitoring equipment and superficial therapy X-ray equipment.

During 1971, four of the latter were calibrated. The standard radioactive sources were used for the calibration of equipment used for the measurement of radioactivity, survey equipment and monitoring films.

RADIOACTIVITY IN THE ENVIRONMENT

The Laboratory has a continuous monitoring programme for radioactivity in rainwater and the atmosphere. Once again, significant increases in radioactive fallout were detected shortly after the French nuclear tests began in the Pacific. The levels were below those considered by international authorities to be a cause for concern.

TECHNICAL ADVICE

The advice of the Laboratory is frequently called upon when new and altered radiation facilities are being designed and when information is needed on the use of X-rays and radioactive substances. Members of the public also turn to the Laboratory for advice when they are concerned about radiation problems.

USE OF SOURCES OF RADIATION IN SCHOOLS AND COLLEGES

An extensive survey of sources of radiation in high schools, technical colleges and the Institute of Technology was carried out towards the end of 1971 and a comprehensive report prepared. The report showed that storage and handling procedures for radioactive sources were unsatisfactory in many high schools and that a number of schools were using a type of source which leaked radioactive materials. Many cold cathode discharge tubes used for demonstration purposes and student experiments were found to produce X-rays in quantities exceeding the recommended levels. Remedial action will be taken in 1972.

MICROWAVE RADIATION

There has been much concern overseas about the potential hazard of leakage of microwave radiation from microwave ovens used for cooking and heating of food in restaurants, cafeterias, etc. Enquiries have shown that about 100 of these ovens were in use in W.A. in 1971. Some are makes which have been known to leak in excess of the recommended standards. A microwave monitoring instrument has been procured and a programme of inspection will be initiated in 1972.

VISIT OF NUCLEAR POWERED SHIP

During July, a nuclear powered U.S. warship visited Fremantle, and with the co-operation of the Australian Atomic Energy Commission and the naval authorities, the State X-Ray Laboratory initiated routine monitoring of the atmosphere and water in the Port and the water surrounding the ship outside the harbour. No release of radioactivity was detected.

MEDICAL PHYSICS

Assistance is given to the Fremantle Hospital and the Public Health Laboratories' Services. Assistance to Fremantle Hospital is primarily in the field of radiotherapy, laboratory personnel attending the Hospital when radioactive substances are administered to patients.

CLASSIFICATION OF RADIOACTIVE SUBSTANCES, MAXIMUM PERMISSIBLE CONCENTRATIONS, ETC.

There are many radioactive substances coming into use which are not included in the schedules attached to the regulations under the Radioactive Substances Act. When not available from other sources, toxicity classifications, maximum permissible body burdens and concentrations in air and water have been calculated using methods recommended by Committee II of the International Commission on Radiological Protection. The calculations are extensive and in 1971, data for radioactive isotopes was determined. Some ambiguity and insufficient detail in the recommended methods was revealed and this has been discussed with the members of Committee II who have been preparing new recommendations. This work has been carried out by Mrs. A. K. Paull.

STAFF

The staff of the Laboratory remains unchanged with the Physicist-in-Charge, three Physicists, a Radiation Officer, Technician and clerical staff. In October Mr. D. W. K. Collins, Physicist, returned from study leave in England where he received the M.Sc., in Radiation Biology from the University of London.

The staff are greatly extended in meeting their commitments to the Council, particularly in the inspection programme, its extension to sources of non-ionising radiation, and in the educational programme.

The steady annual increase in the number of licences is imposing a heavy administrative burden on the division, particularly on the clerical and senior professional staff. Improvements in office systems are being introduced in an endeavour to increase efficiency, but additional clerical staff will be required in the near future.

Appendix XIV

Report on Technical Information Service and Library

J. F. Woolcott, M.B., Ch.B., Medical Officer-in-Charge

This report will cover (1) Work Done, (2) Accommodation, (3) Staff, and (4) General

(1) WORK DONE

Loans

INTERSTATE EXTERNAL LOANS

State or Territory	1968	1969	1970	1971
New South Wales	10	19	37	24
Victoria	9	24	19	11
Queensland	5	2	12	6
South Australia	11	14	17	4
Tasmania	....	2	9	12
Northern Territory	1	3	1	2
A.C.T.	....	....	2	2
Total	36	64	97	61
New Zealand	....	....	2	....
Total	36	64	99	61

The clear trend over the three previous years of increasing loans outside W.A. has been abruptly reversed. No reason is known for this but perhaps more libraries are following the rule that a library, when borrowing externally, should always borrow from the nearest source, geographically.

Intrastate External Loans

There was again a considerable increase in the amount of loans made to institutions and other libraries inside W.A. but instead of Mental Health Services and Hollywood Hospital being the principal borrowers as in 1970, this year it was the Medical Library, the Department of Agriculture and the W.A. Institute of Technology. Most of these "loans" were in actual fact Xerox copies of articles from journals.

Figures for the principal borrowers for the last four years are:—

	1968	1969	1970	1971
Medical Library	86	65	93	140
Department of Agriculture	18	54	76	127
W.A.I.T.	24	36	72	113
Mental Health Services	34	N/A	130	84
Fremantle Hospital	33	44	50	84
Hollywood R.G.H.	94	74	124	66
Government Chemical Laboratories	69	65	44	58
University of W.A.	19	30	34	58
Public Works Department	N/A	N/A	N/A	51
C.S.I.R.O.	N/A	N/A	N/A	39
K.E.M.H.	17	23	49	23
S.C.G. Hospital	50	23	49	18
Library Board	25	30	27	12
Other	....	....	....	....
Totals	568	545	860	873

A total of nearly a thousand loans to other libraries in Australia obviously represents a considerable volume of work and outside inter-library loans added to our own borrowing from other libraries is a large part of the senior library assistant's workload.

Our own interstate borrowing declined somewhat from the peak of 1970. Again the Barr-Smith Library in South Australia was our principal lender. Figures are below:—

INTERSTATE EXTERNAL BORROWINGS

Source	1968	1969	1970	1971
New South Wales	17	17	11	9
Victoria	8	14	24	15
South Australia	1	14	41	29
Queensland	2	....	....	3
Tasmania	....	2	1	....
A.C.T.	4	4	8	13
Total	32	51	85	69

INTRASTATE EXTERNAL BORROWINGS

Source	1968	1969	1970	1971
Medical Library	155	99	214	140
University of W.A.	66	52	55	46
Government Chemical Laboratories	6	18	12	26
Library Board	56	28	32	22
Department of Agriculture	23	28	22	20
Mental Health Services	4	3	12	3
W.A.I.T.	4	1	3	4
Others	....	....	....	4
Total	333	249	372	265

It is pure coincidence that this library lent 140 items to the Medical Library and borrowed the same number from them but it does indicate the close and harmonious working relationship that exists between the two libraries.

New Publications

A total of 1,104 new publications were received during 1971. Destination was for thirty-four units of the library complex. The major receiving units are compared with previous years.

Unit	1968	1969	1970	1971
P.H.D. Library	677	463	497	515
State X-Ray Laboratories	52	30	90	84
P.H. Laboratories	77	40	51	51
Child Health Services	43	38	29	80
Government School of Nursing	24	16	24	26
Virology Laboratory	7	6	11	8
Dental Health Services	1	2	3	1
Chest Clinic	4	2	2	27
Medical Department	2	13	2	141
Hospitals (Various)	25	144	110	160
Others	15	....	....	11
Total	927	759	919	1,104

The large jump in the Medical Department receipts is accounted for by texts purchased for Health Administration course. Although ordered and processed by the library, purchasing costs are borne by a special fund. Also in 1971 material purchased for the State X-Ray Laboratories was not charged to the main library account but to Laboratories' own funds. The major hospitals receiving books were:—

Bunbury Regional Hospital	39
Broome District Hospital	17
Northam Regional Hospital	17
Port Hedland District Hospital	13
Kalgoorlie Regional Hospital	12
Geraldton Regional Hospital	8
Warren District Hospital	6
Derby District Hospital	5
Exmouth District Hospital	5

Eleven other hospitals received fewer than five books.

Journals

Twenty-eight new subscriptions were taken out during the year bringing the total current subscriptions to 676. That the journal subscriptions are increasing at an accelerating rate is shown by comparative figures.

	1968	1969	1970	1971
Additional journals received	12	19	21	28
Total journals received	608	627	648	676
Average monthly routing	1,479	1,114	1,118	1,139

The comment made last year about the British Medical Journal routing still holds good. In addition as from the beginning of 1972 the Lancet will be treated in a similar manner. The heavy routine load of routing journals will thus be eased somewhat.

Journals from this library, besides circulating to members of Public Health and Medical Departments are also routinely circulated to other institutions. The principal organisations of such circulations are as follows:—

Fremantle Prison Hospital	61
Health Education Council	45
Sir Charles Gairdner Hospital	29
Mental Health Services	21
Medical Library	15
Government Chemical Laboratories	14
Nurses' Board	11
Fremantle Hospital	10
Perth City Council	10
Fremantle City Council	7
Bunbury Town Council	6
Department of Agriculture	4

(2) ACCOMMODATION

When the existing library was planned in 1965 it was estimated that, given the shelving as agreed upon with the original architect, space should be sufficient for a full five years. In fact, the plan was modified and shelving reduced by a succeeding architect. By the end of 1970 the library was full. In spite of 300 feet of shelving being made available in an outside shed for storing back copies of journals and some internal re-arrangement, the library in 1971 was overcrowded.

By the end of the year about 250 feet of shelf space was needed, working space was totally inadequate and catalogues had had to spill over to an adjoining area. No space was available for mail receipt or mail despatch and these have to be carried out in areas that should be reserved for other purposes.

As noted in a separate submission to you, if the library is to plan for five years ahead a minimum further space of 3,000 square feet is required. If it is to plan for 10 years ahead floor space of about 5,250 square feet is needed.

(3) STAFF

During this year there were two staff changes. The librarian left in 1970 to go to a related service and a library assistant resigned. Both were replaced after some time.

(4) GENERAL

The work of the library continues to increase in all respects, but the staff morale is very high and there is very good co-operation from them all. Considering the cramped and crowded conditions in which they work this high morale is very commendable.

Appendix XV

General, and Meat Inspection Branches

J. F. Slattery, M.R.S.H., F.A.I.H.S.

A/Chief Health Surveyor

Due to the unfortunate extended sick leave of the Chief Health Surveyor, Mr. A. A. Pilbeam, this report has been prepared and submitted on his behalf.

1. GENERAL

1971 was a difficult and demanding year for the Inspectorate: The problem of insufficient staff to meet the areas of specialisation, and to maintain a state wide supervisory Health Service, was again manifest.

Although during the year under review, staff increases were obtained in both the General and Meat Inspection sections, the impact of the additional man power was largely negated by broadened areas of responsibility and the necessity for numerous officers to reduce accumulated leave credits.

Nevertheless, many aspects of environmental Health, commenced in previous years, were successfully concluded, and new areas of responsibility were assumed, particularly in regard to food and liquor.

2. EDUCATIONAL ARRANGEMENTS

Training of Health Surveyors was continued during 1971. Proposals for upgrading the standard of the present course were closely examined with the co-operation of the Technical Education Division of the Education Department, and methods of upgrading the correspondence courses were also examined and are continuing.

In 1970 a preliminary approach was made at Departmental level to the Western Australian Institute of Technology, with a view to the Institute undertaking the training of Health Surveyors.

This was continued during 1971, and several meetings and discussions were held with Department Heads of the Institute, with encouraging results.

The first course of training for an Associateship in Environmental Health may shortly be a reality.

3. TRAINEES

The introduction of the trainee scheme has proved of particular benefit to the branch and to the Department, and has attracted the interest of young men interested in a career in Environmental Health.

All four of the present trainees were successful in their respective examinations in 1971, and one having successfully completed his final Royal Society of Health examination, was appointed to the Departmental staff.

4. NORTH WEST INSPECTION SERVICES

Regular inspections of the inland North West areas extending from Marble Bar to Paraburdoo and Shay Gap, are provided by a Departmental Officer from Head Office.

The Kimberley Region and the Roebourne Districts Region are provided with Health Supervision by Departmental Officers resident in the respective areas.

The officers are replaced at intervals of approximately two years.

The extensive mineral exploration and development of mining leases throughout the North West with the consequent increase in population, resulting in more complex Health problems, is taxing the ability of the regional officers to provide adequate supervision.

As a consequence re-organisation of the regions is inevitable and forward planning provides for the first stage to be the appointment of a Health Surveyor on a full time basis to the Shire of Roebourne.

5. LIQUOR INSPECTION

The supervision of standards for spirituous and fermented liquors, formerly a function of the Public Health Department has for many years been conducted by the Liquor Inspectors Board of the W.A. Police Department.

Late in 1960, Legislative changes to the Liquor Act placed this responsibility back with the Department.

Additional staff was recruited, and during the year, two officers were occupied full time by this additional duty.

Liaison was established with affected authorities and Industry (Police, Licensing Court, Australian Hotels Associations, Association concerned with wines and spirits and wholesale merchants). An investigatory and sampling program for metropolitan and country areas was evolved and implemented, and special investigations were conducted with regard to spirit strengths.

During the investigations, the sanitation of licensed premises was examined, and where applicable, compliance with the Public Building Regulations was investigated.

6. FOOD

This is an area of increasing complexity and responsibility requiring the full time specialised services of a senior officer assisted by other officers when circumstances dictate.

Activities for the year include investigation of proposals for marketing of food products, investigations of food manufacturers and products for compliance with standards, and examination of State wide aspects of food spoilage, contamination and deterioration.

Special investigations were made into particular forms of food products to establish residual levels of certain contaminates, e.g., pesticides, mercury and P.C.B.

Liaison and co-ordination of activities was established with local authorities and Industry; several lectures on food handling procedures were given to employees engaged in the Industry, and the Education Department was assisted in formulating a course for food handlers.

Following the appointment of Mr. J. Edinger to the new position of Food and Nutrition Officer, a close liaison was established between the Officers of this section and Mr. Edinger.

The branch is indebted to Mr. Edinger for his advice on matters relating to Food Technology.

7. IMPORTED FOODS

For many years an officer has been stationed at Victoria Quay, Fremantle, engaged solely on inspection and investigation of standards of imported Foods arriving by sea transport.

Until recently the same officer was able to provide an equal service for foodstuffs arriving by rail at the Kewdale marshalling yards.

However, the growth of the State is being reflected in the increasing volume of imported foods arriving both by sea and rail, and during 1971 it was necessary to deploy two officers and on several occasions three, to provide adequate supervision.

The necessity for maintaining the Inspection service is shown by the following list of foods condemned during the year:—

Fruit, vegetables	228 cartons
Fish products	876 cartons
Meat products	25 cartons
Cheese	140 cartons
Confectionery	188 cartons
Dried food	21 cartons
Coconut	2 bags
Cereal	12 bags
Tea	2 chests

8. MEAT INDUSTRY

The continued surveillance of the meat industry throughout the State, including premises, transport and personnel, is the responsibility of a senior officer assisted by others as necessary.

The impact of the sustained effort to improve conditions is reflected by the standards now applying to most country slaughter houses.

Four years previously there were two hundred and fifty registered premises in country areas, of which few were at a standard conforming to the regulations; at the end of 1971, this number has been reduced to forty-seven larger premises, constructed and maintained at acceptable standards.

Attaining this standard has required close liaison with local Health Authorities and Industry; the examination of plans and specifications of proposed works, inspection of existing and proposed works, and advice to owners on construction procedures and Abattoir control.

All vehicles throughout the State utilised in the associated Industry of transport of meat and meat products were examined: new vehicles inspected and the Department of transport advised of suitability, or structural changes required to comply with the regulations: existing vehicles were examined and owners, manufacturers and affected local authorities advised of deficiencies where detected.

A marked improvement in standards is evident.

Other matters associated with the meat industry which received attention are as follows:—

1. Advice to Industry on killing procedures and methods of control of numbers of animals slaughtered at a particular works.
2. Advice to local authority Health surveyors on inspection procedures.
3. Liaison with Department of Agriculture on matters of concern to the Industry, and attend related meetings convened by Departments and Industry.
4. Approval of drafts of "Codes of practises" and prepare submissions for proposed Legislation by Codex Alimentarius.
5. Investigate and devise methods of collecting and correlating samples and other data concerning the eradication of disease in food animals. Diseases include Tuberculosis, Brucellosis, Battey disease, Ovis and Hydatids.

9. FISHING INDUSTRY

Surveys of all facets of the wet fish industry, prawning and rock lobster industry was continued.

Existing processing plants were inspected and discussions and meetings on methods of improving structural standards of works and vehicles was discussed with representatives of the Rock Lobster and Prawning Association.

The investigation revealed that several instances of unauthorised processing of shell fish was associated with cases of food poisoning and corrective action was taken.

Draft Legislation, prescribing structural standards for establishments and vessels, and other related aspects of the Industry is currently being considered.

10. MEAT INSPECTION

The provision of meat inspection services at four major metropolitan Abattoirs is a responsibility of the branch and was maintained during the year.

Additional trained staff were recruited to meet the needs of the expanding Industry, and thirty-two officers are now engaged on Meat Inspection duties under the supervision of a senior officer.

Further staff will be required as the Industry expands, and proposed new works are constructed.

The officers engaged on Meat Inspection duties are also responsible for works sanitation and supervision of standards of meat transport vehicles.

Figures relative to the annual slaughtering of food animals throughout the State are shown as Appendix A.

11. ROYAL SHOW

As in previous years the general sanitation of the grounds and control of food handling premises was supervised by a senior Departmental Health Surveyor assisted by a staff of five officers.

The well established liaison between the Department and the Royal Agricultural Society is resulting in steadily improving conditions, and this year was not an exception.

12. COMMUNITY WASTE DISPOSAL

The continued rate of development of the metropolitan area with the resultant increase in volume of both domestic and industrial refuse requiring collection and disposal coupled with a greater awareness and interest in the community has required sustained effort in this aspect of environmental Health.

Late in 1970 a technical sub-committee was formed under the Metropolitan Refuse Disposal Planning Committee, which included in its terms of reference:—

> "That a survey be undertaken as quickly as possible in order to determine the precise nature, composition and quantity of refuse requiring disposal in the metropolitan area."

It was agreed that the survey should be undertaken by the Department.

The survey was conducted during the year under review and included such aspects as:—

1. Remaining area available in existing refuse disposal sites.
2. Estimation/Determination of area available in alternative disposal sites.
3. Projection of disposal area requirements for the next ten year period.

4. Determination of composition and percentages of solid refuse being deposited at sites.
5. Determination of the weight and volume of domestic refuse produced per person per day and the weight and volume of the refuse produced per person per day in the community.
6. Determination of the combustible/non-combustible ratio of domestic and total refuse.
7. An assessment of the current situation of the pigswill removal service and the determination of the annual tonnage being handled.
8. An assessment of the situation regarding disposal of animal bodies and the determination of the number of bodies involved.
9. An assessment of the situation regarding the collection and recycling of such materials as:—

   Glassware—Paper
   Clothing and Rags—Metals (including car bodies, tin cans etc.).
   Meat, poultry and fish wastes.

   An estimation of the total volume being handled of all these products was made.
10. The survey is continuing and has been extended to include liquid wastes both industrial and domestic.

13. SUB-DIVISION OF LAND (HOUSING)

The requests by the Town Planning Board for an opinion on the suitability of land for building purposes conformed to the pattern established during the preceding year.

The requests require an "area survey" encompassing a number of proposed or potential sub-divisions, rather than the examination of an individual proposal.

As a consequence, although the total number of proposals submitted for examination is less than for previous years, the gross area of land examined has increased.

Details of this aspect of the inspection service is detailed hereunder:—

1.	Proposals for metropolitan sub-divisions....	167
2.	Proposals for country sub-divisions	12
3.	Area surveys (a) Town Planning	20
	(b) Local Authorities	12
4.	Appeal investigation (Local Government Department)	32
5.	General enquiries (Local Authorities, land Agents)	260
6.	State Housing Commission Enquiries	6
	Total	509

14. PUBLIC BUILDINGS

Currently a group of five Health Surveyors, and three Electrical Supervisors (seconded from Public Works Department) are engaged in an area of activities, the object of which is to ensure public safety in buildings and premises which provide for public usage.

Plans and specifications of all relevant proposals throughout the State have been examined in 1971 and approvals issued subject to any conditions or amendments necessary under the appropriate Health Act Regulations.

Projects were inspected throughout development, and at final completion to ensure compliance with approved plans and specifications.

Professional and Technical advice, when required, and assistance with country inspections has been provided by officers of the Public Works Department.

A large variety of buildings and premises come within this scope of class IX including public halls, theatres, schools, places of worship, hospitals, nursing homes, grandstands, swimming pools, night clubs and places of entertainment.

The main factors involving public safety which received consideration were:—

(a) *Structural stability*—with special regard in areas subject to cyclonic conditions.

(b) *Fire resistant properties of premises*—

Fire isolation of public buildings from those of a separate occupancy.

The potential fire hazard of materials proposed for ceilings, wall lining, linings of air conditioning ducts, and drapes.

Information is continually being collated from tests by the Commonwealth Experimental Building Station. When satisfactory information regarding a material is not available materials are submitted to a cabinet fire test at the Government Chemical Laboratories.

These procedures provide a basis for classifying and restricting the use of combustible materials to reasonably safe proportions.

(c) Provision of adequate safe means of escape from buildings.

(d) Safety of electrical installation, including suitable signs, safeguards against total blackout, and emergency lighting installations where necessary.

(e) General safety factors such as grade of ramps, design of stairs, water depth in diving pools, fire fighting applicances and maximum safe capacities for buildings are additional important aspects.

Plans of thirteen new nursing homes and one privately owned "A" class hospital were examined and approved throughout the year.

The floors of two new operating theatres in privately owned hospitals were tested by electrical officers of this group to ensure compliance with the requirements of S.A.A. CZ9.

This code requires quarterly testing on a permanent basis and equipment has been acquired to enable this to be done.

Fires occurred in the following public buildings in 1971:—

R.C. Church at Queens Park—24–2–71.
Sir James Night Club, James Street, Perth—4–3–71.
Liberty Theatre, Perth—20–6–71.
Latin Quarter Night Club, William Street, Perth—20–12–71

The cause of these fires has not been established and no member of the public was injured, however it does indicate the necessity of routine inspections to ensure that premises are being maintained in a safe condition.

Air conditioning duct linings were involved in the fire at the Liberty Theatre. These linings were a combustible type which are not permitted under current Regulations and this matter is being closely watched during examination.

An additional electrical supervisor was seconded to the Department during the year to enable the commencement of routine inspections of existing electrical installations.

Officers are engaged almost fully in examination of new buildings and additions, however, as time permits, every effort is being made to increase routine inspections.

A programme has been commenced to inspect all public swimming pools in the Metropolitan area and as many country pools as possible during the swimming season.

Particular attention is being devoted to the safety aspects of the chlorine room, resuscitation equipment and water quality.

Officers of this section and the Occupational Health section have conferred closely with the Water Safety Division of the N.S.C. in obtaining a qualification course, examination and qualifying diploma for swimming pool attendants.

The same officers have served as lecturers and are members of the Assessment Board of the N.S.C., Water Safety Division.

A Register of persons qualified in this field has been instigated and is kept current by the section.

The current trend for hotels and night clubs to provide entertainment has continued to increase departmental involvement from the public buildings aspect.

Plans of all hotels built or altered have been examined with a view to ensuring public safety and as time permits existing premises have been surveyed.

The proprietors of premises found defective have been advised and instructed to rectify defects.

Co-operation from Architects, Builders, Engineers, Proprietors and the public has been good in most instances, however there is a constant tendency in existing premises to fit exit doors with unsuitable locks for security reasons.

This, in conjunction with the use of flammable drapes, furnishings, and decorations, could develop into a severe public hazard if not kept under constant surveillance.

Detailed examination of plans and follow up inspections of new buildings and additions appear to ensure adequate safety precautions in that area at present.

With the population growth and changes in behaviour patterns it appears desirable to extend the provision of surveys and investigations of existing premises.

15. CARAVAN PARKS

There are approximately 190 registered Caravan Parks throughout the State. During the year all were inspected at least once.

In the Metropolitan area, the construction of three new parks was commenced and three others completed major extensions.

In the country areas, twenty-one new developments were commenced, and three others increased existing facilities.

In all instances, plans and specifications were examined, "on site" discussions conducted, and the necessary liaison established with the Tourist Development Authority, Local Authorities, and the developers.

The policy of requiring new developments being constructed to acceptable standards, and efforts to improve existing facilities was continued, and with few exceptions the desired standards have been attained.

An Interstate survey conducted by an Officer of the Branch, revealed that the standards of parks in this State, compare very favourably with those established in other States of the Commonwealth, and two other States have adopted the Western Australian standards as a guide line for proposed new legislation.

The appointment of an officer to deal specifically with this aspect of the Inspection Service and to act as liaison officer to the Tourist Development Authority has proven successful, and forward planning provides for an extenison of activity to examine and ensure standards for holiday cabins, chalets, and holiday flats.

16. METROPOLITAN FLY CAMPAIGN

The yearly fly campaign in conjunction with Metropolitan Local Authorities was again conducted on similar lines to previous years.

Relevant details are shown as Appendix "B".

27 MOSQUITO CONTROL

This matter continued to receive attention from both Departmental and Local Authority Officers.

Activities included a further survey of breeding areas on the foreshores of both the Swan and Canning Rivers to asess efficiency of control methods.

A particular survey to establish the presence or otherwise of Aedes Aegypti was organised and implemented throughout the South West, and North West coastal towns.

The survey is continuing.

18. PEST CONTROL

This work continued as in previous years, and the Officers concerned were involved in a wide variety of routine and specialised activities.

The following aspects received attention:—

1. Training of Pest Control staff employed by the Royal Perth Hospital and Mental Health Services.
2. Lecturing trainee Health Surveyors, and fly control Officers on Pest Control equipment, and use of pesticides.
3. Practical tuition and theory of Pest Control Technology given to the permanent staffs of the Kalgoorlie, Narrogin and Albany Regional Hospitals.
4. Termite control in Government buildings.
5. Evolving a bush fly control programme for Rottnest Island, and evolving an efficient fly control technique for a Metropolitan Refuse Disposal site.
6. A particular survey to determine the number and specie of fly larvae migrating from domestic rubbish receptacles was conducted; fourteen receptacles in various parts of the Metropolitan area were examined weekly for a period of nine weeks.
7. Two hundred and forty Inspections relating to fly control were made of Government Hospitals and Institutions; Sixty-four of sewerage works, and two hundred and seventy-two of Metropolitan Abattoirs, skin drying sheds and railway truck washing yards.

Details of specific pesticide treatments for the various pests encountered are shown hereunder:—

PEST CONTROL

Animal Control—	No. of Treatments
Rodent	240
Possum	1
Cat	11
Pest Control Treatments—	
Cockroach	203
Fly	44
Termite	88
Mosquito	20
Ant	20
Silverfish	12
Bee	7
Flea	14
Clothes-Moth	2
Pigeon-Mite	4
Bed-Bug	3
Spider—Red Back	4
Drug Store Beetle	1
Weevil	1
Flying Ant	1
Total Treatments	676

Note: Total Inspections—576.

19. SEPTIC TANKS

A total of 8,787 plans were examined and approved, which is approximately 2,000 less than the previous year.

The reductions in the number of installations is attributed to the temporary slackening of activity in the building industry which occurred during the year, and the increasingly wider provision of deep sewerage facilities in both Metropolitan and country areas.

A variety of chemicals proposed for use in self contained chemical flushing sanitation systems, or for use as additive to septic tanks and disposal systems were examined and tested.

Of twenty chemical concentrates tested, eighteen were approved as suitable.

Quality control testing of pre-cast septic tanks and drainage components was continued, and new improved methods of testing evolved with the co-operation of the associated industry.

Amendments to the Regulations to provide for the new method of testing are expected to be promulgated during the coming year.

20. FOOD AND WATER SAMPLES

Rivers and lakes (Bacteriological)	570
Oceans (Bacteriological)	922
Oceans and lakes (Salmonella)	144
Miscellaneous (Bacteriological and chemical)	30
Total	1,606
Routine food samples	352
Fremantle Wharf (imported foods)	184
Miscellaneous	190
Total	726

21. DETAILS OF ROUTINE AND SPECIAL INVESTIGATIONS CONDUCTED THROUGHOUT THE YEAR

1. Regular inspections of Perth Airport on behalf of the Department of Civil Aviation.
2. Investigation of Metropolitan beaches and discharge patterns of Industrial Wastes.
3. Survey of standards of cleanliness and food handling procedures at eating houses in Metropolitan area.
4. Itinerant native survey, with Native Welfare Department, on living conditions of seasonably employed natives by the vineyard industry.
5. Examination of vehicles used to prepare food for sale from the vehicle, and advice given on structural and internal fittings requirements.
6. Investigation of statutory appeals, and complaints, made to the Commissioner of Public Health.
7. Inspections of country districts and hospitals. 201 Country towns were visited during the year.
8. Investigation of food premises proposed as suppliers to Government hospitals by Public tender.
9. Testing of new designs of effluent drainage systems and establishing experimental usage.
10. Regular inspection of Rottnest Island on behalf of State Gardens Board.
11. Investigation relating to proposed new legislation or amendments to existing legislation, e.g., Food Hygiene Regulations, Hairdressing establishments, country slaughter yard Regulations.

Appreciation

My thanks are extended to all members of the staff for their assistance and loyalty during the year.

Appendix A

MEAT INSPECTION FOR YEAR ENDED 31st DECEMBER, 1971

Types and Numbers of Animals Slaughtered		Carcases Condemned									Part Carcases Condemned						Organs Condemned						
		Tuberculosis	Emaciation	Piroplasmosis	Caseous Lymph-Adenitis	Para-Typhoid	Traumatic and Septic Conditions	Pleuro-pneumonia	Other Abnormalities	Total Carcases Condemned	Actinomycosis	Caseous Lymph-Adenitis	Tuberculosis	Arthritis	Other Abnormalities	Total Part Carcases Condemned	Actinomycosis	Echinococcus Granulosis	C. Ovis	Hydatids	Tuberculosis	Other Abnormalities	Total Organs Condemned
Midland—																							
Cattle and Calves	29,218	118	....	....	....	....	101	....	13	232	420	....	23	....	172	615	379	207	....	....	36	4,304	4,926
Sheep and Lambs	649,202	....	....	....	20,370	....	4,774	....	7,527	32,671	....	....	....	....	....	....	....	....	....	....	....	301,163	301,163
Pigs	121,574	3	....	....	....	6	116	....	187	312	....	....	....	556	632	1,188	....	....	....	....	....	17,503	17,503
Robbs Jetty—																							
Cattle and Calves	29,565	7	....	....	....	....	31	....	16	54	502	....	....	54	97	653	654	239	....	....	2	2,295	3,190
Sheep and Lambs	265,512	....	....	....	6,683	....	1,042	....	8,759	16,484	....	3,484	....	311	7	3,802	38	694	....	....	....	34,025	34,757
Pigs	19,585	1	....	....	....	12	....	....	31	44	....	44	....	128	105	277	....	....	....	....	2	5,520	5,522
Watsons—																							
Pigs	123,507	3	....	....	....	15	298	2	570	888	....	....	....	7,609	8,722	16,331	....	....	....	....	....	98,969	98,969
Country Districts—																							
Cattle and Calves	88,965	28	3	....	....	....	69	....	52	152	102	....	2	34	117	255	151	....	6	81	....	1,159	1,397
Sheep and Lambs	989,557	....	818	....	1,378	....	2,120	....	1,242	5,558	10	387	....	530	155	1,082	3	....	2,789	6,494	....	85,553	94,839
Pigs	47,351	1	....	....	....	8	19	....	30	58	....	....	....	91	227	318	35	....	....	3	12	9,308	9,358
Total State—																							
Cattle and Calves	147,748	153	3	....	....	....	201	....	81	438	1,024	....	25	88	386	1,523	1,184	446	6	81	38	7,758	9,513
Sheep and Lambs	1,904,271	....	818	....	28,431	....	7,936	....	17,528	54,713	10	3,871	....	841	162	4,884	41	694	2,789	6,494	....	420,741	430,759
Pigs	312,017	8	....	....	....	41	433	2	818	1,302	....	44	....	8,384	9,686	18,114	35	....	....	3	14	131,300	131,352

NOTE :

Country abattoirs include : Albany,* Boulder, Bunbury,† Busselton, Boyup Brook, Dardanup/Donnybrook, Esperance, Greenough, Harvey, Katanning, Manjimup, Merredin, Moora, Narrogin, Northam, Plantagenet, Wagin, Waroona and Woodanilling.

* Only stock slaughtered, no condemnation figures received.

† Six months figures only.

Appendix B

METROPOLITAN FLY CAMPIAGN 1971-72

TRAINING PROGRAMME

Persons Trained at Four Schools:

Women	25
Men	1
University and W.A.I.T. Students	5
Total	31

Metropolitan

16 Local Authorities employed 31 Mature Age Persons and 5 Students as "Fly Control Officers".

16 Local Authorities employed 26 Mature Age Persons and 7 Students as "Fly Control Officers" during 1970–71.

Country

No participation.

Previously Trained Persons Who Re-applied and were Employed.

11 Women
2 Students.

New Local Authority Participating

Nedlands City Council.
Bayswater Shire Council and Geraldton Town Council did not participate this year.
Eight Local Authorities participated in the Autumn Campaign.

METROPOLITAN FLY CAMPAIGN, 1971/72—SPRING-SUMMER SUMMARY OF RESULTS.

Local Authority	No. of Persons Employed.	Time of Employment (in weeks).	Number of Premises Visited.	Number of Premises Inspected.	Number of Premises where Breeding Detected.	Number of Breeding Places Found.	Rubbish Bins.	Buried Food Wastes.	Poultry Keeping.	Incinerators.	Mulch.	Compost Heaps.	Blood and Bone.	Animal Manure.	Fowl Manure.	Lawn Clippings.	Other.
City of Perth	4	40	4,630	3,845	426	462	64	12	....	1	5	34	....	14	29	303	....
City of Stirling	4	20	2,481	2,481	120	120	79	2	7	1	....	5	....	2	5	17	2
City of South Perth	3	30	3,019	2,916	108	128	25	3	5	8	6	11	....	....	13	57	....
City of Fremantle	2	23	5,410	5,115	211	225	44	17	3	2	....	....	....	14	6	139	....
City of Melville	4	52	14,126	13,686	677	709	82	42	12	1	15	91	....	7	8	442	9
City of Subiaco	1	10	3,316	2,087	49	49	17	2	5	1	5	4	1	1	2	11	....
City of Nedlands	2	20	3,069	2,849	306	306	7	1	1	1	....	74	2	1	....	219	....
Town of Cockburn	1	7	1,793	1,219	88	93	49	1	8	1	....	9	....	6	8	11	....
Town of Claremont	1	10	1,870	1,316	108	134	10	9	14	7	7	....	....	....	1	86	....
Town of Mosmans	1	8	1,165	1,130	17	31	5	....	....	....	3	6	....	....	....	17	....
Shire of Bassendean	1	5	1,172	1,158	61	61	4	....	....	....	2	4	....	....	....	51	....
Shire of Belmont	2	16	3,201	2,375	219	219	29	8	20	5	....	9	2	15	....	131	....
Shire of Kalamunda	2	12	1,986	1,917	385	434	224	9	35	15	7	32	....	13	10	89	....
Shire of Rockingham	2	10	3,091	2,104	70	70	40	3	....	1	....	4	....	2	1	19	....
Shire of Swan	2	31	3,160	3,160	401	401	192	12	42	....	....	11	....	....	2	142	....
	32	294	53,489	47,358	3,246	3,442	871	121	152	44	50	294	5	75	85	1,734	11

% OF PREMISES INSPECTED BREEDING FLIES

SPRING SUMMER CAMPAIGN 1971/72

	1970–71 %	1971–72 %
City of Perth	12·5	11·1
City of Stirling	13·2	4·8
City of South Perth	0·7	3·7
City of Fremantle	7·8	4·1
City of Melville	3·0	4·9
City of Subiaco	6·6	2·3
City of Nedlands	—	10·7
Town of Canning	2·0	—
Town of Cockburn	9·9	7·2
Town of Claremont	8·9	8·2
Town of Mosmans	2·1	1·5
Shire of Bassendean	24·2	5·3
Shire of Belmont	7·7	9·3
Shire of Kalamunda	6·3	20·1
Shire of Rockingham	3·3	3·3
Shire of Swan	17·9	12·7

SPRING-SUMMER BREEDING RATE.

	%
1969–70	8·1
1970–71	7·8
1971–72	6·9

METROPOLITAN FLY CONTROL PLANNING COMMITTEE, MARCH 1972

SUMMARY OF SPRING-SUMMER CAMPAIGN

Report on Fly Control Officers (Metropolitan Area)

Local Authorities Participating—16.

Fly Control Officers Employed

Students	5
Mature Age Persons	27
Premises Visited	53,489
Premises Inspected	47,358
Premises Breeding Flies	3,246
Percentage of Premises Not Inspected	11·5%

Breeding Sites

	%
Rubbish Bins	25·30
Buried Food Wastes	3·52
Poultry Keeping	4·42
Incinerators	1·28
Mulch	1·44
Compost Heaps	8·54
Blood and Bone	0·14
Animal Manure	2·18
Fowl Manure	2·47
Lawn Clippings	50·38
Miscellaneous	0·32

Comparative Figures of Breeding

Spring/Summer 1970/71	7·8
Spring/Summer 1971/72	6·9

Appendix XVI

Statistics Branch

Marlene M. Lugg, Sc.D., M.P.H., A.H.A., F.A.P.H.A.
Health Statistician-in-Charge

During 1971, the Statistics Branch was officially recognised by the Public Service Board, which resulted in the bringing together from various sections of the Health Department, personnel who had heretofore been working "unofficially" within the Statistics Branch. This resulted in the following staff complement:—

At Head Office: one health statistician; one senior clerk statistics; four clerks (cancer register, hospital statistics, notifiable diseases and medical records); and one typist (shared with Medical Department A.D.P. Section).

At Sir Charles Gairdner Hospital: one senior data processor; four data processing operators.

At Mental Health Services: one clerk, statistics, one typist; three data processing operators.

This report will cover the major routine and special tasks carried out by the first two groups of staff during 1971. The Mental Health Services staff's work is noted in a separate annual report.

HOSPITAL MORBIDITY STATISTICS COLLECTION

General

The long hoped and planned for inclusion of private hospitals into the Hospital Morbidity Statistics collection occurred on January 1st, 1971. The preliminary planning which was carried out through the co-operation of hospital staff, Bureau of Census and this department, resulted in the inclusion of private hospitals with a minimum of difficulty.

As a result, the Statistical Tables presented in Appendix XVII are truly a "first" for Western Australia; incorporating government, board and private hospitals. It is possible now to carry out more meaningful epidemiological analyses, as the 23 per cent. of patient discharges, which occur in private hospitals are included. Total discharges for W.A. are now known; it remains only to develop a system for analysing the number of individuals discharged, in order to offer maximum benefits from the data collection system.

Great interest was expressed in the entire W.A. Hospital Morbidity Statistics System by officers of the Division of Health Resources Statistics, of the National Centre for Health Statistics, Washington, D.C., who had carried out a trial of "sample" reporting but not total reporting system. A further exchange of ideas should prove to be helpful on both sides of the Pacific.

1971 *Census Year*

The Commonwealth Bureau of Census and Statistics carried out its quinquennial census of Population and Housing in 1971; making this an especially valuable year for hospital statistics, as current demographic data will be available for epidemiological analysis. It is regretted that this Census data will not be available until 1973; however, further Statistical Supplements to the Hospital Morbidity Statistics will be issued when the Census Data necessary for their compilation becomes available. (Age-specific and occupation-specific disease and operation rates, for example.)

Obstetric Statistics

During the year, it became obvious that one section of the morbidity statistics system was still deficient; that dealing with maternity cases. While routine information is gathered on the mother, no information is obtained on the infant. In fact, one is not able to report even how many twins were born. Thus, although the Registrar General reports 24,239 births registered in 1971, only 23,681 "confinements" are listed in the hospital morbidity tables.

If one adds to this the 418 twins and triplets born during 1971, plus the 3 known home confinements, the total accounted for is 24,098, or only 0·6 per cent. less than the births registered. The difference is accounted for by two factors: births occurring outside hospital, which never reach the hospital morbidity statistics, and (mainly) the slight differences because the Registrar General's data refer to "births registered" whereas our data refer to "actual births".

In order to alleviate the above problems, and make the obstetric statistics more meaningful to both the department and individual hospitals, the Statistics Branch, with the assistance of the University Department of Obstetrics and Gynaecology, the Epidemiology Unit of the Department of Medicine, and the Director of Child Health Services, is preparing a modified statistics collection form for use in obstetrics. The new form, which will be introduced in 1973, includes information on mother and infant(s). A draft of this form was presented to the N.H. & M.R.C. Hospital Statistics Subcommittee in December, and met with extremely favourable response, with several states indicating their desire to adopt a similar system.

Tables in Appendix XVII

The Tables in Appendix XVII are largely self-explanatory. However, a few observations will be made, mainly regarding the significance of including the private hospitals in the statistical system.

As noted previously, the private hospitals accounted for 22·8 per cent. of all discharges. However, this 22·8 per cent. was not distributed equally throughout all diseases; ranging from 6·2 per cent. of Infective and Parasitic Diseases to 33·5 per cent. for Diseases of the Musculoskeletal System. The private hospitals account for 19 per cent. of total days spent in hospital (4·5 per cent. for Infective and Parasitic Diseases to 40·5 per cent. of days for treatment of Perinatal Morbidity).

Extremely interesting to note is the average length of stay for the different types of hospital; 10·6 days for teaching hospitals, 8·1 days for other Government and Board hospitals and 7·4 days for private hospitals.

As expected from overseas studies, a greater proportion of the private hospitals' discharges are surgical cases.

Type of Discharge	Type of Hospital			
	Teaching	Other Govt. and Board	Private	Total
Total Discharges	62,417	100,795	48,137	211,349
Surgical Cases	34,195	27,769	32,203	94,167
Percentage of Total	54·8	27·6	66·9	44·6

Again, although 34·2 per cent. of all operation cases are discharged from the Private hospitals, the distribution varies from 2·1 per cent. of Operations on the Thorax to 57·7 per cent. of Operations on the Breast.

In a comparison of length of stay by type of hospital the pattern differs slightly for operations than total discharges, with the Teaching Hospitals having the longest average stay (11·5 days), the other Government and Board hospitals the shortest (5·9 days), and the Private Hospitals in between, with 6·3 days (State average: 8·1 days).

If one compares discharges by age groups for 1970 (Teaching, Government and Board Hospitals only) and 1971 (all hospitals) the effect of not including Private Hospitals would understate the percent of discharges in the 15–44 and 45–64 year age groups. The effect of including private hospital discharges thus gives a truer picture of inpatient hospital morbidity, and has an effect also on the average length of stay, which decreases in the same two age groups, largely due to the shorter average length of stay in the private hospitals. (See table below.)

A COMPARISON OF DISCHARGES FROM W.A. HOSPITALS

PUBLIC HOSPITALS, 1970—PUBLIC AND PRIVATE HOSPITALS, 1971

Description	AGE GROUPS											
	0–4		5–14		15–44		45–64		65 and Over*		Total	
	1970	1971	1970	1971	1970	1971	1970	1971	1970	1971	1970	1971
Number Discharged	23,200	25,898	18,204	23,501	62,891	99,412	23,529	36,104	21,725	26,434	149,549	211,349
Percentage of Total	15·5	12·3	12·3	11·1	42·0	47·0	15·7	17·1	14·5	12·5	100·0	100·0
Length of Stay	143,492	168,539	87,078	110,401	442,625	667,962	296,611	392,899	439,949	491,130	1,415,998	1,830,931
Percentage of Total	10·2	9·2	6·1	6·0	31·1	36·5	20·9	21·5	31·4	26·8	100·0	100·0
Average Length of Stay	6·2	6·5	4·8	4·7	7·0	6·7	12·6	10·9	20·3	18·6	9·5	8·7

* Includes ages not stated.

AUTOMATIC DATA PROCESSING UNIT

The A.D.P. Centre continued to process laboratory request forms, and at the request of the Accounts Branch, began inclusion of charges and billing lists for all Sir Charles Gairdner Hospital patients' laboratory fees, thus reducing the clerical time necessary for hospital staff to carry out billing procedures. This extra service resulted in doubling the number of request forms processed; as the entire laboratories, including microbiology, are now covered by the A.D.P. Unit.

During the year, the A.D.P. centre moved into new quarters across from the hospital, with the University of Western Australia's Medical Statistics and Epidemiology Units. This has proven very successful as staff co-operated during times of extra work and/or machine down-time.

The A.D.P. Centre in addition continues in its routine work of processing all birth weight and perinatal death notifications, notifiable diseases, and Cancer Register.

Equipment in use at the Centre includes two I.B.M. 029 printing punches, one I.B.M. 059 verifyer, one I.B.M. sorter with 13 column counter, and one I.B.M. printer control unit with two typewriters.

Staff turnover remains low, with one of the five data processors resigning to be married.

CANCER REGISTER

Expansion of the hospital morbidity statistics system to include private hospitals had a noticeable effect on the Cancer Register, as all hospitals' discharges which were treated for cancer are now included in the register. Although this has increased the work load of Statistics Branch Staff, the valuable results are already becoming evident.

During her visit overseas, the Officer-in-Charge met with officers of the National Cancer Institute, Biometry Branch in Washington D.C., and the University of Wisconsin Ca RE Project (Cancer Register), to discuss problems and procedures of a statewide epidemiological cancer register, which has proven helpful during the extension of the Register to cover all hospitals.

AD HOC PROJECTS AND SURVEYS

Medical Record Linkage

The Statistics Branch is pleased to be co-operating with Professor M. S. T. Hobbs of the University Medical Faculty's Epidemiology Unit on a special, 3-year project testing the feasibility of medical record linkage in Western Australia. Preliminary planning was carried out during 1971, and active research will begin in early 1972 on this project, made possible by a grant from the National Health and Medical Research Council.

Perinatal Mortality

This study continues actively, with the inclusion of 1970 birth weight data extracted from records of the Registrar General's office. It is hoped to complete the analysis when computer programming becomes available for this project in 1972.

Hospital Priorities Working Party

The analysis of existing hospital facilities has continued and is reaching a stage where valuable data is available in health planning problems, now that private hospital discharges are included in statistical data, as can be seen from the tables in the appendix.

Hospital service areas within the metropolitan area have been re-analysed including private hospitals, eliminating much of the bias of the previous analysis which did not include this 23 per cent. of discharges.

Social and Preventive Medicine Projects

Four medical students worked in the Statistics Branch during their summer holidays. Three were employed by this department on residencies in public health, and one by the university on a Raine Foundation Grant. Their projects are listed below:—

Public Health Department Residencies:

"An Analysis of Means of Transport of Rural Patients to the Perth Metropolitan Area–1970"—Mark Edwards, 4th year Medicine.

"Accidental Injury Admissions to P.M.H., 1970"—Russell Smith, 4th year Medicine.

"The Availability of Teaching Cases in the Perth Area" (to be published in the *Medical Journal of Australia*)—Christopher Reynolds and G. A. Galvin 5th year Medicine students.

Raine Foundation Grant:

"Patterns of Morbidity of the Aboriginal Population of W.A., 1970"—David Forbes, 5th year Medicine.

Medical Manpower Planning

Preliminary work was undertaken for a study of medical manpower needs of Western Australia during the next decade.

During her trip overseas, the Officer-in-Charge consulted with the Directors and staff of the National Centre for Health Statistics, Health Services Manpower Branch; and the National Institutes of Health Manpower Education Branch, Washington, D.C., on problems and procedures including recent attempts at computer simulation techniques for such a survey, which will be completed early in 1972.

Others

A survey of Nurses' Education and Status was carried out at the request of the Royal Australian Nursing Federation; results tabulated and analysed, and report submitted to the R.A.N.F.

Assistance in questionnaire design and analysis of data was given to two surveys of medical practitioners carried out by members of the Royal Australian College of General Practitioners.

Sample selection and analysis of results for the Dental Health Services, survey of children in the Busselton, Bunbury and Harvey areas was carried out by Statistics Branch Officers.

OTHER ITEMS OF INTEREST

During 1971, the Officer-in-Charge, Statistics, again tutored fifth year medical students in epidemiology, lectured on hospital organisation to W.A.I.T. social work students, and research methodology to W.A.I.T. home economics, nutrition and dietetics students.

The Officer-in-Charge attended the joint conference of Hospital Administrators and Matrons in Perth, presented a paper on "Statistics in Nursing of the Future" at the 1971 Nursing Education Seminar, and presented the 1971 Fischer Award Paper in Medical Technology at the Convention of the American Medical Technologists in Cleveland, Ohio, U.S.A. During this trip overseas, she consulted with officers of various divisions of the National Centre for Health Statistics, National Institute of Mental Health, National Cancer Institute in Washington, D.C., U.S.A.; and state and local health facilities in Wisconsin, Pennsylvania and Washington, D.C.

I would like to take this opportunity to express my appreciation to the Statistics Branch Staff for their loyal support and dedication during 1971; a year in which many new projects and problems were coped with, enabling this branch to better serve the health statistics needs of this State.

Appendix XVII

Hospital Morbidity Statistics Tables, 1971

TOTAL DISCHARGES :

1. All Patients Discharged.
   (Summary by Age Groups and Length of Stay.)
2. All Patients Discharged.
   (Sex-specific Summary by Disease Classification, length of stay and outcome.)
3. Age Distribution of all Discharges by Sex and Principal Condition.
4. Age Distribution of Aboriginal Discharges by Sex and Principal Condition.
5. Age Distribution of Non-Aboriginal Discharges by Sex and Principal Condition.
6. Patients Discharged by Race and Principal Condition.
   (Distribution by Race for Discharges, Days in Hospital and percent of total Bed Days.)
7. Patients Discharged by Principal Condition and Type of Hospital.
   (Discharges, Length of Stay and percent of Bed Days for Teaching, Private and Government and Board Hospitals.)
8. Patients Discharged by Principal Condition, Type of Hospital and Geographic Location (Metropolitan or Country).

OPERATION CASES DISCHARGED :

1. All Operation Cases Discharged.
   (Sex-specific summary by Disease Classification, length of stay and outcome.)
2. Age Distribution of Operation Cases by Sex and Operation.
3. Patients Discharged by Operation Group and Type of Hospital.
   (Discharges, length of stay and percent of Bed Days for Teaching, Private and Government and Board Hospitals.)
4. Operation Cases Discharged by Operation Group, Type of Hospital and Geographic Location (Metropolitan or Country).

ACCIDENTS, POISONING AND VIOLENCE CASES (" E " CODE) :

1. All " E Code " Cases Discharged.
   (Sex-specific summary by " E Code " classification, length of stay and outcome.)
2. External Cause of Injury by Nature of Injury Sustained.
   (Number, average age, average length of stay.)

PERTH STATISTICAL DIVISION ONLY :

1. Hospital Discharges.
   (Type of Hospital, number of beds, percent of Metropolitan Discharges.)
2. Hospitalized Non-Metropolitan Patients by Residence and type of hospital.

MISCELLANEOUS :

1. Discharges from W.A. Hospitals by Statistical Division of Residence.
2. Map of above.
3. Geographical Location of In-patient Hospital Care by Patients Residence.
4. Map of above.

ALCOHOLISM :

1. Discharges from W.A. Hospitals for Selected I.C.D. Codes (Alcoholism) 1971, All Persons by hospital from which discharged.
2. Discharges from W.A. Hospitals for Selected I.C.D. Codes (Alcoholism) 1971, Aborigines by hospital from which discharged.
3. Discharges from Metropolitan Teaching Hospitals for Selected I.C.D. Codes (Alcoholism) 1971. Where alcoholism is shown as secondary or contributing condition. All Persons.
4. Discharges from Metropolitan Teaching Hospitals for Selected I.C.D. Codes (Alcoholism) 1971. Where alcoholism is shown as secondary or contributing condition. Aborigines.
5. Number of Discharges from Teaching Hospitals with secondary or contributing condition of alcoholism, where principal reason for admission was accidental injury, 1971. All persons by age groups.
6. Discharges from Teaching Hospitals by Principal Condition, where secondary or contributing condition is alcoholism, 1971. All persons by age groups.

DISCHARGES FROM W.A. HOSPITALS 1971

Summary by Age Groups and Length of Stay (Days)

Description	AGE GROUPS					
	0–4	5–14	15–44	45–64	65 and over*	Total
All Discharges—						
Number	25,898	23,501	99,412	36,104	26,434	211,349
Percentage of Total	12·3	11·1	47·0	17·1	12·5	100·0
Length of Stay	168,539	110,401	667,962	392,899	491,130	1,830,931
Percentage of Total	9·2	6·0	36·5	21·5	26·8	100·0
Average Length of Stay	6·5	4·7	6·7	10·9	18·6	8·7
Operation Cases Only—						
Number	5,294	12,175	49,458	18,063	9,177	94,167
Percentage of Total Operations	5·6	12·8	52·6	19·2	9·8	100·0
Length of Stay	25,751	51,258	355,583	190,588	158,641	761,821
Percentage of Total	3·4	6·2	46·2	24·2	20·0	100·0
Average Stay (Operations)	4·9	4·2	7·2	10·6	17·3	8·1
External Cause (Injury)—						
Number	3,154	4,231	14,960	4,352	2,838	28,535
Percentage of Total Injuries	10·9	14·0	50·4	15·1	9·6	100·0
Length of Stay	15,153	22,009	106,029	47,194	57,465	247,850
Percentage of Total	6·1	8·9	42·8	19·0	23·2	100·0
Average Stay (Injuries)	4·8	5·2	7·1	10·8	20·2	8·7

* Includes ages not stated.

W.A. HOSPITALS

Patients Discharged During 1971

I.C.D. Categories	Disease Groups	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Trans- ferred	Died	Deaths Per 1,000 Separation
Sec. I													
000–009	Intestinal Infectious Diseases	2,466	2,474	18,422	17,390	7·5	7·0	1·01	0·95	4,803	108	29	5
010–019	Tuberculosis	151	90	10,910	5,162	72·3	57·4	0·60	0·28	204	22	15	62
020–027	Zoonotic Bacterial Diseases	7	....	93	....	13·3	....	0·01	....	7	....	....	....
030–039	Other Bacterial Diseases	218	220	3,331	2,498	15·3	11·4	0·18	0·14	380	21	37	84
040–046	Poliomyelitis and Other Enterovirus Diseases of Central Nervous System	35	30	477	186	13·6	6·2	0·03	0·01	60	3	2	30
050–057	Viral Diseases accompanied by Exanthem	642	526	4,162	3,754	6·5	7·1	0·23	0·21	1,155	11	2	1
060–068	Arthropod-borne Viral Diseases	13	10	227	54	17·5	5·4	0·01	0·00	19	3	1	43
070–079	Other Viral Diseases	993	968	5,023	5,253	5·1	5·4	0·27	0·29	1,940	18	3	1
080–089	Rickettsioses and Other Arthropod-borne Diseases	46	8	246	56	5·3	7·0	0·01	0·00	54	....	....	....
090–099	Syphilis and Other Venereal Diseases	75	94	1,030	720	13·7	7·7	0·06	0·04	162	7	....	....
100–104	Other Spirochaetal Diseases	8	4	36	12	9·0	3·0	0·00	0·00	12	....	....	....
110–117	Mycoses	57	70	1,062	875	18·6	12·5	0·06	0·05	123	4	....	....
120–129	Helminthiases	24	20	196	178	8·2	8·9	0·01	0·01	43	1	....	....
130–136	Other Infective and Parasitic Diseases	228	205	2,008	1,680	8·8	8·2	0·11	0·09	430	3	....	....
Sec. II													
140–149	Malignant Neoplasm of Buccal Cavity and Pharynx	125	32	1,417	388	11·3	12·1	0·08	0·02	138	5	14	89
150–159	Malignant Neoplasm of Digestive Organs and Peritoneum	388	280	8,609	7,368	22·2	26·3	0·47	0·40	470	27	171	255
160–163	Malignant Neoplasm of Respiratory System	543	92	11,039	2,454	20·3	26·7	0·60	0·13	439	19	177	278
170–174	Malignant Neoplasm of Bone, Connective Tissue, Skin and Breast	658	653	6,676	9,362	10·1	14·3	0·36	0·51	1,258	24	29	22
180–189	Malignant Neoplasm of Genito-Urinary Organs	590	375	7,875	5,157	13·3	13·8	0·43	0·28	860	31	74	76
190–199	Malignant Neoplasm of Other and Unspecified Sites	470	527	9,395	10,138	20·0	19·2	0·51	0·55	602	62	333	334
200–209	Neoplasms of Lymphatic and Haematopoietic Tissue	257	236	3,028	3,050	11·8	12·9	0·17	0·17	403	17	73	148
210–228	Benign Neoplasms	460	1,368	2,688	9,383	5·8	6·9	0·15	0·51	1,817	11	....	....
230–239	Neoplasm of Unspecified Nature	154	171	1,492	1,383	9·7	8·1	0·08	0·08	297	17	11	33
Sec. III													
240–246	Diseases of Thyroid Gland	64	313	983	3,776	15·4	12·1	0·05	0·21	355	19	3	7
250–258	Diseases of Other Endocrine Glands	456	606	7,027	8,095	15·4	13·4	0·38	0·44	969	57	36	33
260–269	Avitaminoses and Other Nutritional Deficiency	251	256	3,363	3,154	13·4	12·3	0·18	0·17	467	35	5	9
270–279	Other Metabolic Diseases	171	194	1,678	2,558	9·8	13·2	0·09	0·14	344	13	6	2
Sec. IV													
280–289	Diseases of Blood and Blood Forming Organs....	509	551	4,124	4,900	8·1	8·9	0·23	0·27	1,013	34	13	12

Sec. V													
290–299	Psychoses	317	396	5,554	8,184	17·5	20·7	0·30	0·45	597	106	10	14
300–309	Neuroses, Personality Disorders and Other Non-Psychotic Mental Disorders	1,415	1,689	17,128	20,297	12·1	12·0	0·94	1·11	2,958	140	6	1
310–315	Mental Retardation	30	18	378	210	12·6	11·7	0·02	0·01	42	5	1	20
Sec. VI													
320–324	Inflammatory Diseases of the Central Nervous System	77	64	993	1,153	12·9	18·0	0·05	0·06	112	16	13	92
330–333	Hereditary and Familial Diseases of Nervous System	29	14	644	138	22·2	9·9	0·04	0·01	33	4	6	139
340–349	Other Diseases of Central Nervous System	853	739	14,460	13,069	17·0	17·7	0·79	0·71	1,463	93	36	22
350–358	Diseases of Nerves and Peripheral Ganglia	335	493	3,987	4,190	11·9	8·5	0·22	0·23	797	27	4	4
360–369	Inflammatory Diseases of the Eye	633	497	4,503	2,350	7·1	4·7	0·25	0·13	1,117	12	1	....
370–379	Other Diseases and Conditions of the Eye	1,500	1,368	11,127	10,327	7·4	7·5	0·61	0·56	2,838	26	4	1
380–389	Diseases of the Ear and Mastoid Process	1,539	1,345	7,859	7,141	5·1	5·3	0·43	0·39	2,834	50	....	....
Sec. VII													
390–392	Active Rheumatic Fever	129	108	1,974	1,726	15·3	16·0	0·11	0·09	220	17	....	....
393–398	Chronic Rheumatic Heart Disease	66	98	921	1,186	14·0	12·1	0·05	0·06	140	13	11	67
400–404	Hypertensive Disease	429	689	4,717	8,082	11·0	11·7	0·26	0·44	1,046	38	34	30
410–414	Ischaemic Heart Disease	2,084	1,215	30,998	20,730	14·9	17·1	1·69	1·13	2,787	94	418	126
420–429	Other Forms of Heart Disease	1,450	1,052	23,919	21,554	16·5	20·5	1·31	1·18	2,120	102	280	111
430–438	Cerebrovascular Disease	1,031	870	28,310	29,573	27·5	34·0	1·55	1·62	1,285	202	414	217
440–448	Diseases of Arteries, Arterioles and Capillaries	411	240	9,305	6,477	22·6	27·0	0·51	0·35	517	63	71	109
450–458	Other Diseases of Circulatory System	1,392	2,128	16,052	23,339	11·5	11·0	0·88	1·27	3,433	38	49	13
Sec. VIII													
460–466	Acute Respiratory Infection (except Influenza)	2,804	2,237	14,078	10,939	5·0	4·9	0·77	0·60	4,993	38	10	1
470–474	Influenza	237	335	1,183	2,053	5·0	6·1	0·06	0·11	566	5	1	1
480–486	Pneumonia	1,966	1,236	20,723	12,522	10·5	10·1	1·13	0·68	2,896	91	215	67
490–493	Bronchitis, Emphysema and Asthma	3,679	2,571	35,064	20,349	9·5	7·9	1·92	1·11	6,069	121	60	9
500–508	Other Diseases of Upper Respiratory Tract	3,867	3,600	13,830	12,087	3·6	3·4	0·76	0·66	7,454	13	....	....
510–519	Other Diseases of Respiratory System	1,511	1,115	16,738	11,030	11·1	9·9	0·91	0·60	2,465	84	77	29
Sec. IX													
520–529	Diseases of Oral Cavity, Salivary Glands and Jaws	2,018	2,714	4,657	5,559	2·3	2·0	0·25	0·30	4,711	16	5	1
530–537	Diseases of Oesophagus, Stomach and Duodenum	1,337	771	13,562	7,277	10·1	9·4	0·74	0·40	2,009	69	30	14
540–543	Appendicitis	2,108	2,543	13,918	17,102	6·6	6·7	0·76	0·93	4,579	71	1	....
550–553	Hernia of Abdominal Cavity	2,229	684	18,652	7,013	8·4	10·3	1·02	0·38	2,879	26	8	2
560–569	Other Diseases of Intestine and Peritoneum	1,054	1,176	10,276	13,044	9·7	11·1	0·56	0·71	2,110	73	47	21
570–577	Diseases of Liver, Gall Bladder and Pancreas	1,059	2,003	13,993	25,119	13·2	12·5	0·76	1·37	2,948	66	48	15
Sec. X													
580–584	Nephritis and Nephrosis	230	147	3,258	2,059	14·2	14·0	0·18	0·11	332	19	26	68
590–599	Other Diseases of Urinary System	3,076	2,915	15,080	16,292	4·9	5·6	0·82	0·89	5,868	82	41	6
600–607	Diseases of Male Genital Organs	2,534	....	18,573	....	7·3	....	1·01	....	2,485	39	10	3
610–616	Diseases of Breast, Ovary, Fallopian Tube and Parametrium	65	2,512	306	18,277	4·7	7·3	0·02	1·00	2,566	11	....	....
620–629	Diseases of Uterus and Other Female Genital Organs	....	8,562	....	46,243	....	5·4	....	2·53	8,531	31	....	....

W.A. HOSPITALS—*continued*

Patients Discharged During 1971—continued

I.C.D. Categories	Disease Groups	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Trans-ferred	Died	Deaths Per 1,000 Separation
Sec. XI													
630–634	Complications of Pregnancy	....	3,389	....	13,512	....	4·0	....	0·74	3,281	108	....	....
635–639	Urinary Infections and Toxaemias of Pregnancy and Puerperium	....	1,173	....	6,458	....	5·5	....	0·35	1,127	46	....	....
640–645	Abortion	....	2,589	....	8,697	....	3·4	....	0·48	2,573	16	....	....
650–662	Delivery	....	23,681	....	210,588	....	8·9	....	11·50	23,494	182	5	....
670–678	Complications of the Puerperium	....	224	....	936	....	4·2	....	0·05	219	4	1	4
Sec. XII													
680–686	Infections of Skin and Subcutaneous Tissue	1,801	1,010	12,924	7,704	7·2	7·6	0·71	0·42	2,772	36	3	1
690–698	Other Inflammatory Conditions of Skin and Subcutaneous Tissue	403	321	3,661	2,541	9·1	7·9	0·20	0·14	711	11	2	2
700–709	Other Diseases of Skin and Subcutaneous Tissue	1,684	1,397	12,860	10,800	7·6	7·7	0·70	0·59	3,048	28	5	1
Sec. XIII													
710–718	Arthritis and Rheumatism except Rheumatic Fever	871	976	16,174	23,419	18·6	24·0	0·88	1·28	1,784	48	15	8
720–729	Osteomyelitis and Other Diseases of Bone and Joint	2,221	1,554	23,222	17,306	10·5	11·1	1·27	0·95	3,697	75	3	....
730–738	Other Diseases of Musculoskeletal System	722	1,091	5,229	9,385	7·2	8·6	0·29	0·51	1,790	17	6	3
Sec. XIV													
740–759	Congenital Anomalies	998	760	8,559	7,022	8·6	9·2	0·47	0·38	1,643	66	49	27
Sec. XV													
760–779	Certain Causes of Perinatal Morbidity and Mortality	389	362	6,476	5,456	16·6	15·1	0·35	0·30	680	40	31	41
Sec. XVI													
780–789	Symptoms Referable to Systems or Organs	6,258	6,108	35,386	34,703	5·7	5·7	1·93	1·90	11,809	395	162	13
790–796	Ill Defined Diseases	1,063	1,757	22,316	29,542	21·0	16·8	1·22	1·61	2,553	153	114	40
Sec. XVII													
800–809	Fracture of Skull, Spine and Trunk	1,548	595	20,189	8,511	13·0	14·3	1·10	0·46	1,982	111	50	23
810–819	Fracture of Upper Limb	1,749	1,162	9,173	6,492	5·2	5·6	0·50	0·35	2,830	77	4	1
820–829	Fracture of Lower Limb	1,500	1,056	31,378	29,428	20·9	27·9	1·71	1·61	2,246	256	54	21
830–839	Dislocation without Fracture	621	184	4,272	1,338	6·9	7·3	0·23	0·07	781	21	3	3
840–848	Sprains and Strains of Joints and Adjacent Muscles	910	404	5,777	2,831	6·3	7·0	0·32	0·15	1,288	25	1	....
850–854	Intracranial Injury (excluding those with Skull Fracture)	2,388	1,048	8,748	4,486	3·7	4·3	0·48	0·25	3,321	78	37	10
860–869	Internal Injury of Chest, Abdomen and Pelvis	234	93	2,165	1,278	9·3	13·7	0·12	0·07	297	15	15	45
870–879	Laceration and Open Wound of Head, Neck and Trunk	1,111	550	5,731	2,441	5·2	4·4	0·31	0·13	1,623	35	3	1
880–887	Laceration and Open Wound of Upper Limb	1,477	300	6,750	1,286	4·6	4·3	0·37	0·07	1,752	23	2	1
890–897	Laceration and Open Wound of Lower Limb	762	316	6,151	1,854	8·1	5·9	0·34	0·10	1,064	14	....	....
900–907	Laceration and Open Wound of Multiple Location	245	108	1,012	566	4·1	5·2	0·06	0·03	342	11	....	....

Patients Discharged During 1971—continued

I.C.D. Categories	Disease Groups	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1,000 Separation
Sec. XVII —*continued*													
910–918	Superficial Injury	264	132	1,073	695	4·1	5·3	0·06	0·04	390	6	....	....
920–929	Contusion and Crushing with Intact Skin Surface	715	353	3,618	2,327	5·1	6·6	0·20	0·13	1,042	24	2	1
930–939	Effects of Foreign Body Entering through Orifice	297	227	1,206	490	4·1	2·2	0·07	0·03	513	10	1	1
940–949	Burn	865	370	10,874	4,833	12·6	13·1	0·59	0·26	1,180	42	13	10
950–959	Injury to Nerves and Spinal Cord	106	43	1,026	262	9·7	6·1	0·06	0·01	138	11	....	....
960–979	Adverse Effect of Medicinal Agents	634	1,188	3,168	8,477	5·0	7·1	0·17	0·46	1,711	95	16	8
980–989	Toxic Effect of Substances Chiefly Non-Medicinal as to Source	687	364	1,997	1,006	2·9	2·8	0·11	0·05	1,034	12	5	4
990–999	Other Adverse Effects	1,721	1,085	11,958	8,544	6·9	7·9	0·65	0·47	2,702	81	23	8
Sec. Y													
Y00–Y09	Examination and Investigation of Specific Systems without reported diagnosis	1,240	2,505	4,919	7,208	4·0	2·9	0·27	0·39	3,693	48	4	1
Y10–Y19	Other Examinations Without Reported Diagnosis	17	23	220	126	12·9	5·5	0·01	0·01	38	2	....	....
Y20–Y29	Medical and Surgical Procedures without Reported Diagnosis	147	128	306	404	2·1	2·4	0·02	0·02	254	21	....	....
Y30-Y39	Medical and Surgical Aftercare without Current Complaint or Sickness	1,446	897	10,232	6,520	7·1	7·3	0·56	0·36	2,302	40	1	....
Y40–Y49	Persons Undergoing Preventive Measures	150	1,046	226	4,084	1·5	3·9	0·01	0·22	1,194	2	....	....
Y50–Y59	Elective Surgery	369	206	802	1,680	2·2	8·2	0·04	0·09	573	2	....	....
Y60–Y69	Maternal and Well-baby Care	69	524	1,485	3,399	21·5	6·5	0·08	0·19	564	29	....	....
Y70–Y79	Other Persons without Current Complaint or Sickness	130	168	910	1,192	7·0	7·1	0·05	0·07	288	10	....	....
Y80–Y89	Healthy Live Born Infants according to Type of Birth	....	....	....	....	....	....	....	....	....	....	....	....
	Total	91,365	119,984	815,510	1,015,421	8·9	8·5	44·54	55·46	202,947	4,799	3,603	17
	Grand Total, Male and Female	211,349		1,830,931		8·7		100					

W.A. HOSPITALS, 1971

Age Distribution of Patients Discharged by Sex and Principal Condition

I.C.D. Category	Principal Condition Males	Age Groups																Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
000–136	Infective and Parasitic	2,534	612	258	203	274	192	113	104	104	89	81	77	72	67	161	22	4,963
140–239	Neoplasms	73	48	53	59	58	95	73	105	140	225	240	376	521	586	990	3	3,645
240–279	Endocrine, Nutritional, Metabolic	247	40	25	19	17	34	29	28	31	62	56	74	79	61	132	8	942
280–289	Blood and Blood Forming Organs	100	82	57	21	26	17	8	16	16	11	12	19	21	25	78	....	509
290–315	Mental Disorders	85	29	32	58	110	109	109	123	160	235	223	140	113	83	145	8	1,762
320–389	Nervous System and Sense Organs	1,063	689	295	154	201	193	212	211	242	221	225	272	276	288	402	22	4,966
390–458	Circulatory System	23	57	65	48	108	133	182	236	337	530	625	789	966	981	1,901	11	6,992
460–519	Respiratory System	4,564	2,399	910	525	592	421	349	307	337	347	342	486	582	620	1,246	37	14,064
520–577	Digestive System	855	860	786	721	846	686	490	474	575	617	556	600	564	475	693	7	9,805
580–629	Genito-Urinary System	410	202	257	130	298	380	499	614	760	488	230	267	336	338	690	6	5,905
680–709	Skin and Subcutaneous Tissue	463	351	307	329	368	285	233	187	231	184	187	196	183	135	234	15	3,888
710–738	Musculoskeletal System	90	123	140	237	344	301	287	258	298	322	283	304	299	241	286	1	3,814
740–759	Congenital Anomalies	438	216	133	54	25	27	20	8	10	8	9	15	18	4	12	1	998
760–779	Perinatal Morbidity	386	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	389
780–796	Symptoms and Illdefined Conditions	1,264	524	397	310	385	352	358	369	385	447	366	411	405	439	881	28	7,321
N800–N999	Accidents, Poisoning, Violence	1,825	1,249	1,392	2,440	2,717	1,701	1,163	965	915	827	641	580	429	342	590	58	17,834
Y00–Y89	Supplementary Classifications	638	174	143	227	245	229	224	211	210	210	215	206	210	172	245	9	3,568
	Male Total	15,058	7,655	5,250	5,535	6,614	5,155	4,349	4,216	4,751	4,823	4,291	4,812	5,074	4,857	8,686	239	91,365
	Females																	
000–136	Infective and Parasitic	2,163	461	288	300	329	227	133	79	91	93	97	73	106	72	183	24	4,719
140–239	Neoplasms	87	50	79	119	212	192	228	231	289	322	320	342	290	368	601	4	3,734
240–279	Endocrine, Nutritional, Metabolic	246	27	29	35	52	65	81	64	67	82	115	100	101	87	206	12	1,369
280–289	Blood and Blood Forming Organs	54	80	31	32	29	25	27	20	30	27	24	23	25	30	90	4	551
290–315	Mental Disorders	68	22	38	139	191	214	231	162	185	191	151	138	118	86	167	2	2,103
320–389	Nervous System and Sense Organs	878	539	262	157	198	197	192	201	175	227	232	241	269	186	549	17	4,520
390–458	Circulatory System	30	42	56	42	122	219	322	323	407	484	449	540	621	633	2,094	16	6,400
460–519	Respiratory System	3,013	2,021	874	832	579	467	363	314	288	285	321	353	306	296	729	53	11,094
520–577	Digestive System	518	912	909	1,157	1,123	756	594	510	488	531	441	465	396	358	720	13	9,891
580–629	Genito-Urinary System	155	147	111	1,049	2,239	2,133	2,078	1,711	1,474	1,120	652	341	261	219	421	25	14,136
630–678	Pregnancy and Childbirth	....	....	49	4,031	11,607	8,970	4,145	1,677	482	47	4	....	....	....	....	44	31,056
680–709	Skin and Subcutaneous Tissue	350	245	207	263	208	151	136	108	129	137	143	144	140	115	240	12	2,728
710–738	Musculoskeletal System	61	72	156	223	231	164	199	245	231	304	343	312	294	249	528	9	3,621
740–759	Congenital Anomalies	281	120	86	75	49	24	27	17	13	16	12	10	9	6	15	....	760
760–779	Perinatal Morbidity	350	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	362
780–796	Symptoms and Illdefined Conditions	1,045	492	418	646	723	544	496	373	393	396	341	376	318	329	934	41	7,865
N800–N999	Accidents, Poisoning, Violence	1,252	830	703	1,001	816	534	497	444	421	407	389	392	376	360	1,114	42	9,578
00–Y89	Supplementary Classifications	289	136	104	364	885	924	694	482	361	332	272	176	141	101	200	36	5,497
	Female Total	10,840	6,196	4,400	10,465	19,593	15,806	10,443	6,961	5,524	5,001	4,306	4,026	3,771	3,495	8,791	366	119,984
	Grand Total Male and Female	25,898	13,851	9,650	16,000	26,207	20,961	14,792	11,177	10,275	9,824	8,597	8,838	8,845	8,352	17,477	605	211,349

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Age Distribution of Aborigines Discharged by Sex and Principal Condition

I.C.D. Category	Principal Condition Males	AGE GROUPS																Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
000–136	Infective and Parasitic	986	147	51	24	17	17	10	10	13	7	10	7	8	9	13	21	1,350
140–239	Neoplasms	4	4	1	1	....	....	1	....	1	1	1	1	4	3	1	2	25
240–279	Endocrine, Nutritional, Metabolic	56	4	....	....	....	2	3	6	6	6	6	4	9	2	13	7	124
280–289	Blood and Blood Forming Organs	16	9	4	....	1	....	1	2	....	....	....	1	....	....	1	....	35
290–315	Mental Disorders	9	3	2	1	4	4	10	7	4	....	5	....	1	3	1	3	57
320–389	Nervous System and Sense Organs	345	107	38	15	11	7	6	12	10	7	13	9	7	10	16	18	631
390–458	Circulatory System	1	10	6	8	4	4	5	11	15	16	17	20	18	9	16	7	167
460–519	Respiratory System	1,137	141	50	29	18	21	23	23	39	29	31	20	29	22	38	31	1,681
520–577	Digestive System	76	23	14	7	11	8	10	5	8	3	1	4	8	6	10	5	199
580–629	Genito-Urinary System	19	15	15	12	14	12	10	6	4	7	6	1	10	6	8	4	149
680–709	Skin and Subcutaneous Tissue	195	128	74	43	30	24	30	15	31	7	13	14	3	4	14	14	639
710–738	Musculoskeletal System	7	6	11	10	9	4	9	3	8	2	3	....	6	5	3	1	87
740–759	Congenital Anomalies	15	4	3	....	....	....	....	....	1	....	....	....	1	....	....	....	24
760–779	Perinatal Morbidity	39	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	39
780–796	Symptoms and Illdefined Conditions	220	64	42	21	12	17	22	20	17	18	20	20	17	19	43	22	594
N800–N999	Accidents, Poisoning, Violence	207	103	69	114	118	78	60	66	60	40	36	35	13	10	17	29	1,055
Y00–Y89	Supplementary Classifications....	60	7	5	4	2	3	1	3	1	5	4	2	1	1	3	8	110
	Male Total	3,392	775	385	289	251	201	201	189	218	148	166	138	135	109	197	172	6,966
	Females																	
000–136	Infective and Parasitic	826	102	51	37	25	19	20	16	17	5	6	4	10	4	11	21	1,174
140–239	Neoplasms	3	1	3	....	1	7	3	6	2	4	5	2	1	5	2	2	47
240–279	Endocrine, Nutritional, Metabolic	51	2	....	3	7	3	4	5	2	8	8	13	11	4	5	10	136
280–289	Blood and Blood Forming Organs	15	10	7	3	1	2	2	2	1	1	....	....	....	2	....	3	49
290–315	Mental Disorders	3	5	6	6	6	5	12	11	8	5	2	8	2	2	....	1	82
320–389	Nervous System and Sense Organs	282	92	65	21	11	9	10	24	5	6	10	10	16	5	11	12	589
390–458	Circulatory System	2	9	16	6	3	8	11	17	16	13	7	9	13	9	18	7	164
460–519	Respiratory System	773	118	62	45	49	33	47	38	39	26	43	23	22	20	31	44	1,413
520–577	Digestive System	48	35	23	14	24	13	12	19	16	9	8	7	6	5	3	7	249
580–629	Genito-Urinary System	11	13	12	78	73	30	38	28	15	19	8	5	7	7	9	13	366
630–678	Pregnancy and Childbirth	....	....	11	326	394	245	153	87	31	4	....	....	....	....	....	35	1,286
680–709	Skin and Subcutaneous Tissue	163	102	46	25	16	14	20	15	15	10	9	8	13	6	8	11	481
710–738	Musculoskeletal System	12	9	7	7	6	7	5	7	4	6	6	5	6	6	6	3	102
740–759	Congenital Anomalies	18	3	10	....	....	....	....	2	1	1	....	....	....	....	....	....	35
760–779	Perinatal Morbidity	36	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	36
780–796	Symptoms and Illdefined Conditions	203	83	52	64	58	36	38	34	33	19	14	20	22	15	25	34	750
N800–N999	Accidents, Poisoning, Vio'ence	129	73	50	67	70	72	80	67	47	41	23	12	23	8	17	34	813
Y00–Y89	Supplementary Classifications	50	1	3	36	43	23	30	15	7	5	3	2	3	1	1	28	251
	Female Total	2,625	658	424	738	787	526	485	393	259	182	152	128	155	99	147	265	8,023
	Grand Total, Male and Female	6,017	1,433	809	1,027	1,038	727	686	582	477	330	318	266	290	208	344	437	14,989

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Age Distribution of Non-Aborigines Discharged by Sex and Principal Condition

I.C.D. Category	Principal Condition	AGE GROUPS																Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70 +	Not Stated	
	Males																	
000–136	Infective and Parasitic	1,548	465	207	179	257	175	103	94	91	82	71	70	64	58	148	1	3,613
140–239	Neoplasms	69	44	52	58	58	95	72	105	139	224	239	375	517	583	989	1	3,620
240–279	Endocrine, Nutritional, Metabolic	191	36	25	19	17	32	26	22	25	56	50	70	70	59	119	1	818
280–289	Blood and Blood Forming Organs	84	73	53	21	25	17	7	14	16	11	12	18	21	25	77	....	474
290–315	Mental Disorders	76	26	30	57	106	105	99	116	156	235	218	140	112	80	144	5	1,705
320–389	Nervous System and Sense Organs	718	582	257	139	190	186	206	199	232	214	212	263	269	278	386	4	4,335
390–458	Circulatory System	22	47	59	40	104	129	177	225	322	514	608	769	948	972	1,885	4	6,825
460–519	Respiratory System	3,427	2,258	860	496	574	400	326	284	298	318	311	466	553	598	1,208	6	12,383
520–577	Digestive System	779	837	772	714	835	678	480	469	567	614	555	596	556	469	683	2	9,606
580–629	Genito-Urinary System	391	187	242	118	284	368	489	608	756	481	224	266	326	332	682	2	5,756
680–709	Skin and Subcutaneous Tissue	268	223	233	286	338	261	203	172	200	177	174	182	180	131	220	1	3,249
710–738	Musculoskeletal System	83	117	129	227	335	297	278	255	290	320	280	304	293	236	283	....	3,727
740–759	Congenital Anomalies	423	212	130	54	25	27	20	8	9	8	9	15	17	4	12	1	974
760–779	Perinatal Morbidity	347	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	350
780–796	Symptoms and Illdefined Conditions	1,044	460	355	289	373	335	336	349	368	429	346	391	388	420	838	6	6,727
N800–N999	Accidents, Poisoning, Violence	1,618	1,146	1,323	2,326	2,599	1,623	1,103	899	855	787	605	545	416	332	573	29	16,779
Y00–Y89	Supplementary Classifications....	578	167	138	223	243	226	223	208	209	205	211	204	209	171	242	1	3,458
	Male Total	11,666	6,880	4,865	5,246	6,363	4,954	4,148	4,027	4,533	4,675	4,125	4,674	4,939	4,748	8,489	67	84,399
	Females																	
000–136	Infective and Parasitic	1,337	359	237	263	304	208	113	63	74	88	91	69	96	68	172	3	3,545
140–239	Neoplasms	84	49	76	119	211	185	225	225	287	318	315	340	289	363	599	2	3,687
240–279	Endocrine, Nutritional, Metabolic	195	25	29	32	45	62	77	59	65	74	107	87	90	83	201	2	1,233
280–289	Blood and Blood Forming Organs	39	70	24	29	28	23	25	18	29	26	24	23	25	28	90	1	502
290–315	Mental Disorders	65	17	32	133	185	209	219	151	177	186	149	130	116	84	167	1	2,021
320–389	Nervous System and Sense Organs	596	447	197	136	187	188	182	177	170	221	222	231	253	181	538	5	3,931
390–458	Circulatory System	28	33	40	36	119	211	311	306	391	471	442	531	608	624	2,076	9	6,236
460–519	Respiratory System	2,240	1,903	812	787	530	434	316	276	249	259	278	330	284	276	698	9	9,681
520–577	Digestive System	470	877	886	1,143	1,099	743	582	491	472	522	433	458	390	353	717	6	9,642
580–629	Genito-Urinary System	144	134	99	971	2,166	2,103	2,040	1,683	1,459	1,101	644	336	254	212	412	12	13,770
630–678	Pregnancy and Childbirth	....	....	38	3,705	11,213	8,725	3,992	1,590	451	43	4	....	....	....	....	9	29,770
680–709	Skin and Subcutaneous Tissue	187	143	161	238	192	137	116	93	114	127	134	136	127	109	232	1	2,247
710–738	Musculoskeletal System	49	63	149	216	225	157	194	238	227	298	337	307	288	243	522	6	3,519
740–759	Congenital Anomalies	263	117	76	75	49	24	27	15	12	15	12	10	9	6	15	....	725
760–779	Perinatal Morbidity	314	....	....	....	....	....	....	....	....	....	....	....	....	....	..	12	326
780–796	Symptoms and Illdefined Conditions	842	409	366	582	665	508	458	339	360	377	327	356	296	314	909	7	7,115
N800–N999	Accidents, Poisoning, Violence	1,123	757	653	934	746	462	417	377	374	366	366	380	353	352	1,097	8	8,765
Y00–Y89	Supplementary Classifications	239	135	101	328	842	901	664	467	354	327	269	174	138	100	199	8	5,246
	Female Total	8,215	5,538	3,976	9,727	18,806	15,280	9,958	6,568	5,265	4,819	4,154	3,898	3,616	3,396	8,644	101	111,961
	Grand Total, Male and Female	19,881	12,418	8,841	14,973	25,169	20,234	14,106	10,595	9,798	9,494	8,279	8,572	8,555	8,144	17,133	168	196,360

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Patients Discharged by Race and Principal Condition

I.C.D. Category	Principal Condition Groups	Discharges					Days in Hospital					Average Number of Days in Hospital			% of Total Bed Days		
		Aboriginal		Non-Aboriginal		Total	Aboriginal		Non-Aboriginal		Total	Abo-riginal	Non-Abo-riginal	Total	Abo-riginal	Non-Abo-riginal	Total
		Number	% for Group	Number	% for Group		Number	% for Group	Number	% for Group							
000–136	Infective and Parasitic	2,524	26·1	7,158	73·9	9,682	28,722	33·8	56,238	66·2	84,960	11·4	7·9	8·8	1·57	3·07	4·64
140–239	Neoplasms	72	1·0	7,307	99·0	7,379	1,466	1·5	99,436	98·5	100,902	20·4	13·6	13·7	0·08	5·43	5·51
240–279	Endocrine, Nutritional, Metabolic	260	11·3	2,051	88·7	2,311	4,956	16·2	25,678	83·8	30,634	19·1	12·5	13·3	0·27	1·40	1·67
280–289	Blood and Blood Forming Organs....	84	7·9	976	92·1	1,060	1,039	11·5	7,985	88·5	9,024	12·4	8·2	8·5	0·06	0·44	0·49
290–315	Mental Disorders	139	3·6	3,726	96·4	3,865	821	1·6	50,930	98·4	51,751	5·9	13·7	13·4	0·04	2·78	2·83
320–389	Nervous System and Sense Organs	1,220	12·9	8,266	87·1	9,486	12,208	14·9	69,733	85·1	81,941	10·0	8·4	8·6	0·67	3·81	4·48
390–458	Circulatory System	331	2·5	13,061	97·5	13,392	5,310	2·3	223,553	97·7	228,863	16·0	17·1	17·1	0·29	12·21	12·50
460–519	Respiratory System	3,094	12·3	22,064	87·7	25,158	26,062	15·3	144,534	84·7	170,596	8·4	6·6	6·8	1·42	7·89	9·32
520–577	Digestive System	448	2·3	19,248	97·7	19,696	3,857	2·6	146,315	97·4	150,172	8·6	7·6	7·6	0·21	7·99	8·20
580–629	Genito-Urinary System	515	2·6	19,526	97·4	20,041	4,490	3·7	115,598	96·3	120,088	8·7	5·9	6·0	0·25	6·31	6·56
630–678	Pregnancy and Childbirth	1,286	4·1	29,770	95·9	31,056	10,427	4·3	229,764	95·7	240,191	8·1	7·7	7·7	0·57	12·55	13·12
680–709	Skin and Subcutaneous Tissue	1,120	16·9	5,496	83·1	6,616	9,055	17·9	41,435	82·1	50,490	8·1	7·5	7·6	0·49	2·26	2·76
710–738	Musculoskeletal System	189	2·5	7,246	97·5	7,435	1,908	2·0	92,827	98·0	94,735	10·1	12·8	12·7	0·10	5·07	5·17
740–759	Congenital Anomalies	59	3·4	1,699	96·6	1,758	922	5·9	14,659	94·1	15,581	15·6	8·6	8·9	0·05	0·80	0·85
760–779	Perinatal Morbidity	75	10·0	676	90·0	751	1,655	13·9	10,277	86·1	11,932	22·1	15·2	15·9	0·09	0·56	0·65
780–796	Symptoms and Illdefined Conditions	1,344	8·9	13,842	91·1	15,186	13,133	10·8	108,814	89·2	121,947	9·8	7·9	8·0	0·72	5·94	6·66
N800–N999	Accidents, Poisoning, Violence	1,868	6·8	25,544	93·2	27,412	14,839	6·6	208,572	93·4	223,411	7·9	8·2	8·2	0·81	11·39	12·20
Y00–Y89	Supplementary Classifications	361	4·0	8,704	96·0	9,065	2,603	6·0	41,110	94·0	43,713	7·2	4·7	4·8	0·14	2·25	2·39
	Total	14,989	7·1	196,360	92·9	211,349	143,473	7·8	1,687,458	92·2	1,830,931	9·6	8·6	8·7	7·84	92·16	100·00

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Patients Discharged by Principal Condition and Type of Hospital

I.C.D. Categories	Principal Condition Groups	Discharges							Days in Hospital							Average Number of Days in Hospital				Percentage of Total Bed Days			
		Teaching		Private		Other Govt. and Board		All Hospitals	Teaching		Private		Other Govt. and Board		All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals
		No.	% for Group	No.	% for Group	No.	% for Group		No.	% for Group	No.	% for Group	No.	% for Group									
000–136	Infective and Parasitic	2,564	26·5	596	6·2	6,522	67·4	9,682	36,118	42·5	3,804	4·5	45,038	53·0	84,960	14·1	6·4	6·9	8·8	1·97	0·21	2·46	4·64
140–239	Neoplasms	3,663	49·6	1,949	26·4	1,767	23·9	7,379	58,057	57·5	18,293	18·1	24,552	24·3	100,902	15·8	9·4	13·9	13·7	3·17	1·00	1·34	5·51
240–279	Endocrine, Nutritional. Metabolic	888	38·4	426	18·4	997	43·1	2,311	12,786	41·7	5,099	16·6	12,749	41·6	30,634	14·4	12·0	12·8	13·3	0·70	0·28	0·70	1·67
280–289	Blood and Blood Forming Organs	421	39·7	216	20·4	423	39·9	1,060	3,775	41·8	1,915	21·2	3.334	36·9	9,024	9·0	8·9	7·9	8·5	0·21	0·10	0·18	0·49
290–315	Mental Disorders	1,544	39·9	674	17·4	1,647	42·6	3,865	22,503	43·5	9,387	18·1	19,861	38·4	51,751	14·6	13·9	12·1	13·4	1·23	0·51	1·08	2·83
320–389	Nervous System and Sense Organs	3,396	35·8	2,907	30·6	3,183	33·6	9,486	33,640	41·1	14,687	17·9	33.614	41·0	81,941	9·9	5·1	10·6	8·6	1·84	0·80	1·84	4·48
390–458	Circulatory System	5,481	40·9	2,265	16·9	5,646	42·2	13,392	95,523	41·7	30,085	13·1	103,255	45·1	228,863	17·4	13·3	18·3	17·1	5·22	1·64	5·64	12·50
460–519	Respiratory System	6,413	25·5	4,706	18·7	14,039	55·8	25,158	45,513	26·7	22,638	13·3	102,445	60·1	170,596	7·1	4·8	7·3	6·8	2·49	1·24	5·60	9·32
520–577	Digestive System	4,389	22·3	5,963	30·3	9,344	47·4	19,696	45,431	30·3	42,410	28·2	62,331	41·5	150,172	10·4	7·1	6·7	7·6	2·48	2·32	3·40	8·20
580–629	Genito-Urinary System	5,895	29·4	6,563	32·7	7,583	37·8	20,041	34,553	28·8	42.494	35·4	43,041	35·8	120,088	5·9	6·5	5·7	6·0	1·89	2·32	2·35	6·56
630–678	Pregnancy and Childbirth	6,115	19·7	9,174	29·5	15,767	50·8	31,056	43,352	18·0	77,288	32·2	119,551	49·8	240,191	7·1	8·4	7·6	7·7	2·37	4·22	6·53	13·12
680–709	Skin and Subcutaneous Tissue	916	13·8	1,602	24·2	4.098	61·9	6,616	9,675	19·2	10,211	20·2	30,604	60·6	50,490	10·6	6·4	7·5	7·6	0·53	0·56	1·67	2·76
710–738	Musculoskeletal System	2,130	28·6	2,490	33·5	2,815	37·9	7,435	42,850	45·2	22,338	23·6	29,547	31·2	94,735	20·1	9·0	10·5	12·7	2·34	1·22	1·61	5·17
740–759	Congenital Anomalies	1,214	69·1	331	18·8	213	12·1	1,758	12,761	81·9	1,609	10·3	1,211	7·8	15,583	10·5	4·9	5·7	8·9	0·70	0·09	0·07	0·85
760–779	Perinatal Morbidity	93	12·4	247	32·9	411	54·7	751	932	7·8	4,831	40·5	6,169	51·7	11,932	10·0	19·6	15·0	15·9	0·05	0·26	0·34	0·65
780–796	Symptoms and Illdefined Conditions ...	3,478	22·9	2,310	15·2	9,398	61·9	15,186	21,024	17·2	18,691	15·3	82,232	67·4	121,947	6·0	8·1	8·7	8·0	1·15	1·02	4·49	6·66
N800–N999	Accidents, Poisoning. Violence	11,638	42·5	2,638	9·6	13,136	47·9	27,412	128,094	57·3	18,145	8·1	77,172	34·5	223,411	11·0	6·9	5·9	8·2	7·00	0·99	4·21	12·20
Y00–Y89	Supplementary Classifications....	2,179	24·0	3,080	34·0	3,806	42·0	9,065	14,087	32·2	11,872	27·2	17.754	40·6	43,713	6·5	3·9	4·7	4·8	0·77	0·65	0·97	2·39
	Total	62,417	29·5	48,137	22·8	100,795	47·7	211,349	660,674	36·1	355,797	19·4	814.460	44·5	1830931	10·6	7·4	8·1	8·7	36·08	19·43	44·48	100·00

W.A. HOSPITALS, 1971

Patients Discharged by Principal Condition and Type of Hospital

I.C.D. Categories	Principal Condition Groups	Discharges														
		Metropolitan								Country						
		Teaching		Government		Private		Total		Govt. and Board		Private		Total		State
		Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Hos-pitals Total
000–136	Infective and Parasitic	2,564	26·48	554	5·26	400	4·13	3,518	36·34	5,968	61·64	196	2·02	6,164	63·66	9,682
140–239	Neoplasms	33,663	49·64	391	5·30	1,886	25·56	5,940	80·50	1,376	18·65	63	0·85	1,439	19·50	7,379
240–279	Endocrine, Nutritional, Metabolic	888	38·42	114	4·93	387	16·75	1,389	60·10	883	38·21	39	1·69	922	39·90	2,311
280–289	Blood and Blood Forming Organs	421	39·72	53	5·00	139	17·83	663	62·55	370	34·91	27	2·55	397	37·45	1,060
290–315	Mental Disorders	1,544	39·95	120	3·10	578	14·75	2,242	58·01	1,527	39·51	96	2·48	1,623	41·99	3,865
320–389	Nervous System and Sense Organs	3,396	35·80	244	2·57	2,801	29·53	6,441	67·90	2,939	30·98	106	1·12	3,045	32·10	9,486
390–458	Circulatory System	5,481	40·93	866	6·47	2,041	15·24	8,388	62·63	4,780	35·69	224	1·67	5,004	37·37	13,392
460–519	Respiratory System	6,413	25·49	2,073	8·24	4,089	16·25	12,575	49·98	11,966	47·56	617	2·45	12,583	50·02	25,158
520–577	Digestive System	4,389	22·28	2,401	12·19	5,011	25·44	11,801	59·92	6,943	35·25	952	4·83	7,895	40·08	19,696
530–629	Genito-Urinary System	5,895	29·41	2,981	14·87	6,183	30·85	15,059	75·14	4,602	22·96	380	1·90	4,982	24·86	20,041
630–678	Pregnancy and Childbirth	6,115	19·69	6,875	22·14	8,460	7·24	21,450	69·07	8,892	28·63	714	2·30	9,606	30·93	31,056
680–709	Skin and Subcutaneous Tissue	916	13·85	685	10·35	1,406	21·25	3,007	45·45	3,413	51·59	196	2·96	3,609	54·55	6,616
710–738	Musculoskeletal System	2,130	28·65	473	6·36	2,374	31·93	4,977	66·94	2,342	31·50	116	1·56	2,458	33·06	7,435
740–759	Congenital Anomalies	1,214	69·06	65	3·70	323	18·37	1,602	91·13	148	8·42	8	0·46	156	8·87	1,758
760–779	Perinatal Morbidity	93	12·38	162	21·57	246	32·76	501	66·71	249	33·16	1	0·13	250	33·29	751
780–796	Symptoms and Illdefined Conditions	3,478	22·90	923	6·08	1,774	11·68	6,175	40·66	8,475	55·81	536	3·53	9,011	59·34	15,186
N800–N999	Accidents, Poisoning, Violence	11,638	42·46	1,100	4·01	2,132	7·78	14,870	54·25	12,036	43·91	506	1·85	12,542	45·75	27,412
Y00–Y89	Supplementary Classifications	2,179	24·04	1,341	14·79	2,876	31·73	6,396	70·56	2,465	27·19	204	2·25	2,669	29·44	9,065
	Total	62,417	29·53	21,421	10·14	43,156	20·42	126,994	60·09	79,374	37·56	4,981	2·36	84,355	39·91	211,349

W.A. HOSPITALS

Operation Cases Discharged During 1971

Code of Surgical Procedures	Operation Group	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent. of Operation Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Dis-charged	Trans-ferred	Died	Deaths per 1,000 Separations
Sec. I													
001–019	Skull, Brain and Cerebral Meninges	210	120	6,092	4,252	29·0	35·4	0·80	0·56	263	30	37	112
020–029	Spine and Spinal Cord	456	274	8,002	5,948	17·6	21·7	1·05	0·78	682	30	18	24
030–035	Cranial Nerves	18	17	249	111	13·8	6·5	0·03	0·01	33	....	2	57
036–039	Autonomic Nervous System (Sympathetic and Parasympathetic)	66	34	1,727	890	26·2	26·2	0·23	0·12	91	5	4	40
040–049	Peripheral Nerves	201	293	1,469	1,562	7·3	5·3	0·19	0·21	493	1	....	....
Sec. II													
061–063	Pituitary	1	2	8	40	8·0	20·0	0·00	0·01	1	2	....	....
065–069	Adrenal	....	18	....	546	....	30·3	....	0·07	15	1	2	111
071–076	Thyroid and Parathyroid	29	187	375	2,038	12·9	10·9	0·05	0·27	216	....	....	....
077–079	Thymus and Carotid Body	1	2	4	38	4·0	19·0	0·00	0·00	3	....	....	....
080–089	Surgery of Neck	271	199	3,258	2,172	12·0	10·9	0·43	0·29	424	37	9	19
Sec. III													
100–109	Orbit and Globe	92	31	865	240	9·4	7·7	0·11	0·03	119	3	1	8
110–115	Eye Muscles of Globe	292	325	1,501	1,414	5·1	4·4	0·20	0·19	617	....	....	....
117–129	Eyelids	320	261	2,320	1,224	7·3	4·7	0·30	0·16	573	7	1	1
132–139	Conjunctiva	384	232	1,011	1,118	2·6	4·8	0·13	0·15	612	4	....	....
140–149	Cornea	76	23	923	208	12·1	9·0	0·12	0·03	99	....	....	....
150–159	Iris and Ciliary Body	75	78	981	847	13·1	10·9	0·13	0·11	149	3	1	6
160–169	Sclera, Choroid, Retina and Vitreous	90	66	1,384	764	15·4	11·6	0·18	0·10	156	....	....	....
170–179	Lens	311	345	4,296	4,737	13·8	13·7	0·56	0·62	651	2	3	4
180–189	Lacrimal Apparatus	153	149	367	330	2·4	2·2	0·05	0·04	302	....	....	....
Sec. IV													
190–209	Ear	1,102	895	4,219	3,420	3·8	3·8	0·55	0·45	1,968	27	2	1
210–224	Nose	1,585	931	6,150	4,251	3·9	4·6	0·81	0·56	2,510	6	....	....
225–229	Accessory Air Sinuses and other Parts of Face	67	55	397	455	5·9	8·3	0·05	0·06	121	1	....	....
230–239	Naso-pharynx	2,737	3,017	9,165	9,115	3·4	3·0	1·20	1·20	5,749	5	....	....
240–249	Larynx and Trachea	299	138	4,192	3,784	14·0	27·4	0·55	0·50	402	9	26	59
Sec. V													
250–259	Teeth and Jaws	1,842	2,492	4,701	4,757	2·6	1·9	0·62	0·62	4,317	15	2	....
260–267	Tongue and Mouth	120	87	753	495	6·3	5·7	0·10	0·06	207	. ..	....	....
270–273	Salivary Glands (Parotid, Sublingual, Submandibular Glands)	63	62	359	402	5·7	6·5	0·05	0·05	124	....	1	8
280–283	Pharynx	24	13	205	122	8·5	9·4	0·03	0·02	36	....	1	27
290–299	Oesophagus	244	230	2,042	1,390	8·4	6·0	0·27	0·18	458	6	10	21

Sec. VI													
300–309	Heart	227	173	2,883	2,528	12·7	14·6	0·38	0·33	348	27	25	62
320–329	Intra Thoracic Vessels	43	28	909	379	21·1	13·5	0·12	0·05	58	8	5	70
330–339	Thoracic Cage	201	107	5,727	1,921	28·5	18·0	0·75	0·25	277	7	24	77
340–349	Lung and Bronchus	288	103	5,142	1,750	17·9	17·0	0·67	0·23	372	4	15	38
Sec. VII													
380–389	Breast	70	1,217	369	9,791	5·3	8·1	0·05	1·29	1,280	6	1	....
Sec. VIII													
400–409	Abdominal Wall	262	530	5,041	7,883	19·2	14·9	0·66	1·03	708	19	65	82
410–419	Hernia	2,057	543	17,380	5,668	8·5	10·4	2·28	0·74	2,577	16	7	2
420–439	Stomach	474	214	7,248	3,623	15·3	16·9	0·95	0·48	660	17	11	15
440–445	Appendix	1,910	2,361	13,165	16,472	6·9	7·0	1·73	2·16	4,229	41	1	....
446	Other Diverticulae	4	3	39	51	9·8	17·0	0·01	0·01	7	....	....	....
450–469	Small Intestine-Colon	411	474	7,117	8,441	17·3	17·8	0·93	1·11	818	26	41	46
470–479	Rectum	117	86	2,499	1,717	21·4	20·0	0·33	0·23	197	2	4	19
480–499	Anus	1,050	665	11,220	5,799	10·7	8·7	1·47	0·76	1,704	7	4	2
500–509	Liver	50	42	984	656	19·7	15·6	0·13	0·09	83	2	7	76
510–519	Bile Ducts	24	46	553	1,020	23·0	22·2	0·07	0·13	65	2	3	42
520–529	Gall Bladder	319	1,114	5,271	15,677	16·5	14·1	0·69	2·06	1,413	11	9	6
530–539	Pancreas	2	3	63	76	31·5	25·3	0·01	0·01	5	....	....	....
540–549	Spleen and Abdominal Venous System	50	32	783	669	15·7	20·9	0·10	0·09	76	1	5	60
550–559	Abdominal Structures, N.E.C.	46	24	777	320	16·9	13·3	0·10	0·04	60	5	5	71
Sec. IX													
560–579	Kidney	222	161	3,120	2,396	14·0	14·9	0·41	0·31	371	9	3	7
580–589	Ureter	284	267	2,589	1,874	9·1	7·0	0·34	0·25	540	6	5	9
600–619	Urinary Bladder	1,615	914	11,334	4,206	7·0	4·6	1·49	0·55	2,495	19	15	5
620–629	Urethra	429	105	1,981	674	4·6	6·4	0·26	0·09	522	10	2	3
630–637	Prostate	692	....	14,127	....	20·4	....	1·85	....	659	15	18	26
639	Seminal Vesicles	....	....	....	....	....	....	....	....	....	....	....	....
640–669	Testis, Epididymis and Scrotum	2,214	....	7,609	....	3·4	....	1·00	....	2,204	10	....	....
Sec. X													
671–679	Ovary	....	309	....	3,294	....	10·7	....	0·43	305	4	....	....
681–689	Oviduct (Fallopian Tube)	....	2,942	....	21,218	....	7·2	....	2·79	2,936	6	....	....
690–709	Uterus (Hysterectomy)	....	9,029	....	45,660	....	5·1	....	5·99	9,007	21	1	....
710–729	Vagina	....	528	....	6,839	....	13·0	....	0·90	527	1	....	....
730–739	Introitus, Vulva, Labia and Perineum	....	294	....	1,307	....	4·5	....	0·17	294	....	....	....
Sec. XI													
740–750	Ante-natal Obstetric Operations	....	1,480	....	7,296	....	4·9	....	0·96	1,470	10	....	....
751–769	Delivery Obstetric Operations	....	5,053	....	50,413	....	10·0	....	6·62	5,030	22	1	....
770–779	Post-Natal or Post-Abortion Obstetric Operations	....	1,890	....	8,101	....	4·3	....	1·06	1,884	6	....	....

W.A. HOSPITALS—*continued*

Operation Cases Discharged During 1971—continued

Code of Surgical Procedures	Operation Group	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent. of Operation Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Dis-charged	Trans-ferred	Died	Deaths per 1,000 Separations
Sec. XII													
780–788	Treatment of Fractures	2,001	1,404	27,836	21,580	13·9	15·4	3·65	2·83	3,260	111	34	9
790–799	Bone	520	587	7,881	9,549	15·2	16·3	1·03	1·25	1,092	9	6	5
800–822	Joints	2,106	1,647	20,389	23,093	9·7	14·0	2·68	3·03	3,680	52	21	5
825–826	Capsule and Ligaments of Joints	106	35	770	201	7·3	5·7	0·10	0·03	139	2	....	....
827–828	Bursae	82	27	444	227	5·4	8·4	0·06	0·03	109	....	....	....
830–839	Muscles	44	49	854	760	19·4	15·5	0·11	0·10	92	1	....	....
840–852	Tendon	626	489	3,834	2,313	6·1	4·7	0·50	0·30	1,104	11	....	....
854–859	Fascia	129	46	888	287	6·9	6·2	0·12	0·04	173	1	1	5
860–879	Amputations and Other Operations on Limbs	404	138	7,195	2,967	17·8	21·5	0·94	0·39	509	20	13	23
Sec. XIII													
880–889	Arteries	178	90	2,809	1,244	15·8	13·8	0·37	0·16	243	15	10	37
890–898	Veins	286	1,101	2,933	10,541	10·3	9·6	0·38	1·38	1,378	8	1	....
900–909	Lymphatics	85	68	882	995	10·4	14·6	0·12	0·13	149	1	3	19
Sec. XIV													
910–929	Skin and Subcutaneous Tissue	4,702	3,334	27,715	19,470	5·9	5·8	3·64	2·56	7,970	45	21	2
930–939	Plastic Operations	976	459	11,738	6,710	12·0	14·6	1·54	0·88	1,425	9	1	....
Sec. XV													
940–950	Injection for General Action	2,380	1,558	10,446	9,418	4·4	6·0	1·37	1·24	3,801	37	100	25
952–959	Operations with Site Unspecified	14	14	184	95	13·1	6·8	0·02	0·01	27	....	1	35
960–969	Non-operative Procedures	407	412	2,949	3,238	7·3	7·9	0·39	0·43	799	18	2	2
970–979	Anaesthetic Procedures	100	586	333	4,042	3·3	6·9	0·04	0·53	678	6	2	2
980–999	Diagnostic Radiographic Techniques	764	710	13,460	12,217	17·6	17·2	1·77	1·60	1,278	86	110	74
	Total	40,100	54,067	338,485	423,336	8·4	7·8	44·43	55·57	92,478	966	723	7
	Grand Total Male and Female	94,167		761,821		8·1		100					

Age Distribution of Operation Cases by Sex and Operation

Code of Surgical Procedures	Operation Group	Five Year Age Groups															Total All Ages
	Males	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
001–049	Nervous System	41	13	30	60	75	70	88	82	82	82	91	70	60	53	54	....	951
061–089	Endocrine System	39	16	15	11	15	21	18	18	21	23	20	30	23	12	18	2	302
100–189	Eye	280	150	77	54	79	81	74	72	100	99	89	161	126	128	221	2	1,793
190–249	Ear, Nose and Throat	682	1,726	624	452	475	316	257	214	182	176	152	145	159	112	116	2	5,790
250–299	Upper Alimentary Tract	239	409	160	232	283	169	115	83	115	107	90	85	66	64	74	2	2,293
300–349	Thorax	52	28	12	20	36	26	20	20	37	54	70	85	95	103	99	2	759
380–389	Breast	....	....	8	12	8	3	5	7	5	5	4	3	3	2	5	....	70
400–559	Abdomen	503	370	529	450	515	448	381	401	429	482	461	463	474	390	477	3	6,776
560–669	Urinary and Male Genital Organs	686	224	171	130	201	274	350	353	328	309	229	345	472	466	915	3	5,456
671–739	Female Genital Tract	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
740–779	Obstetric	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
780–879	Orthopaedic	169	350	456	743	841	554	428	363	374	399	292	305	259	215	268	2	6,018
880–909	Peripheral Circulation	5	5	10	12	21	28	35	32	41	64	69	71	64	53	38	1	549
910–939	Skin and Subcutaneous Tissue	511	463	461	656	662	466	343	279	338	272	258	251	226	176	306	10	5,678
940–999	Other Surgical Procedures	148	73	165	100	209	240	241	424	584	387	175	175	232	213	298	1	3,665
	Male Total, All Operations	3,355	3,827	2,718	2,932	3,420	2,696	2,355	2,348	2,636	2,459	2,000	2,189	2,259	1,987	2,889	30	40,100
	Females																	
001–049	Nervous System	20	13	17	32	38	43	64	74	55	81	79	53	61	36	71	1	738
061–089	Endocrine System	36	9	9	12	38	34	48	26	48	41	42	20	20	10	13	2	408
100–189	Eye	279	118	54	52	46	46	43	72	57	73	81	97	106	97	286	3	1,510
190–249	Ear, Nose and Throat	486	1,555	664	622	382	265	190	139	133	131	115	103	96	71	81	3	5,036
250–299	Upper Alimentary Tract	214	508	272	323	425	260	156	120	93	115	104	92	70	58	72	2	2,884
300–349	Thorax	43	27	11	14	24	8	19	19	26	42	36	31	34	34	43	....	411
380–389	Breast	2	2	8	72	108	140	115	141	188	144	89	63	36	51	56	2	1,217
400–559	Abdomen	173	290	541	734	631	494	440	371	421	399	333	320	285	228	474	3	6,137
560–669	Urinary and Male Genital Organs	34	32	20	68	103	122	152	107	97	114	105	138	79	87	188	1	1,447
571–739	Female Genital Tract	15	13	27	655	2,051	2,429	2,353	1,770	1,388	1,049	626	227	177	137	167	18	13,102
740–779	Obstetric	....	....	25	1,277	2,902	2,314	1,188	519	171	19	3	....	....	....	....	5	8,423
780–879	Orthopaedic	155	238	303	324	270	184	184	221	230	306	347	344	340	259	711	6	4,422
880–909	Peripheral Circulation	3	2	4	9	50	117	183	157	167	181	126	95	64	51	49	1	1,259
910–939	Skin and Subcutaneous Tissue	357	353	367	470	322	241	181	169	194	187	179	178	161	148	276	10	3,793
940–999	Other Surgical Procedures	122	89	59	212	523	307	275	274	240	196	159	180	184	154	300	6	3,280
	Female Total, All Operations	1,939	3,249	2,381	4,876	7,913	7,004	5,591	4,179	3,508	3,078	2,424	1,941	1,713	1,421	2,787	63	54,067
	Grand Total, Male and Female	5,294	7,076	5,099	7,808	11,333	9,700	7,946	6,527	6,144	5,537	4,424	4,130	3,972	3,408	5,676	93	94,167

W.A. HOSPITALS, 1971

Patients Discharged by Operation Group and Type of Hospital

Code of Surgical Procedures	Operation Groups	Discharges							Days in Hospital							Average Number of Days in Hospital				Per cent. of Total Bed Days			
		Teaching		Private		Other Govt. and Board		All Hospitals	Teaching		Private		Other Govt. and Board		All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals
		No.	% for Group	No.	% for Group	No.	% for Group		No.	% for Group	No.	% for Group	No.	% for Group									
001–049	Nervous System	1,043	61·8	481	28·5	165	9·8	1,689	23,727	78·3	4,879	16·1	1,696	5·6	30,302	22·7	10·1	10·3	17·9	3·11	0·64	0·22	3·98
061–089	Endocrine System	454	63·9	177	24·9	79	11·1	710	6,177	72·9	1,655	19·5	647	7·6	8,479	13·6	9·4	8·2	11·9	0·81	0·22	0·08	1·11
100–189	Eye	1,348	40·8	1,566	47·4	389	11·8	3,303	13,632	55·6	8,153	33·2	2,745	11·2	24,530	10·1	5·2	7·1	7·4	1·79	1·07	0·36	3·22
190–249	Ear, Nose and Throat	2,642	24·4	5,192	48·0	2,992	27·6	10,826	16,203	35·9	17,771	39·4	11,174	24·7	45,148	6·1	3·4	3·7	4·2	2·13	2·33	1·47	5·93
250–299	Upper Alimentary Tract	951	18·4	1,981	38·3	2,245	43·4	5,177	7,107	46·7	4,232	27·8	3,887	25·5	15,226	7·5	2·1	1·7	2·9	0·93	0·56	0·51	2·00
300–349	Thorax	1,093	93·4	25	2·1	52	4·4	1,170	20,020	94·3	156	0·7	1,063	5·0	21,239	18·3	6·2	20·4	18·2	2·63	0·02	0·14	2·79
380–389	Breast	206	16·0	743	57·7	338	26·3	1,287	2,648	26·1	5,475	53·9	2,037	20·0	10,160	12·9	7·4	6·0	7·9	0·35	0·72	0·27	1·33
400–559	Abdomen	4,084	31·6	4,229	32·7	4,600	35·6	12,913	55,775	39·8	42,185	30·1	42,252	30·1	140,212	13·7	10·0	9·2	10·9	7·32	5·54	5·55	18·40
560–669	Urinary and Male Genital Organs	2,510	36·4	2,640	23·8	1,753	25·4	6,903	25,066	50·2	14,360	28·8	10,484	21·0	49,910	10·0	5·4	6·0	7·2	3·29	1·88	1·38	6·55
671–739	Female Genital Tract	1,946	14·9	5,169	39·5	5,987	45·7	13,102	16,944	21·6	32,016	40·9	29,358	37·5	78,318	8·7	6·2	4·9	6·0	2·22	4·20	3·85	10·28
740–779	Obstetric....	3,698	43·9	2,457	29·2	2,268	26·9	8,423	28,705	43·6	21,540	32·7	15,565	23·7	65,810	7·8	8·8	6·9	7·8	3·77	2·83	2·04	8·64
780–879	Orthopaedic	4,970	47·6	3,150	30·2	2,320	22·2	10,440	88,752	67·7	22,384	17·1	19,932	15·2	131,068	17·9	7·1	8·6	12·6	11·65	2·94	2·62	17·20
880–909	Peripheral Circulation	487	26·9	822	45·5	499	27·6	1,808	7,512	38·7	7,286	37·5	4,606	23·7	19,404	15·4	8·9	9·2	10·7	0·99	0·96	0·60	2·55
910–939	Skin and Subcutaneous Tissue	3,205	33·8	2,780	29·4	3,486	36·8	9,471	33,664	51·3	15,141	23·1	16,828	25·6	65,633	10·5	5·4	4·8	6·9	4·42	1·99	2·21	8·62
940–999	Other Surgical Procedures	5,558	80·0	791	11·4	596	8·6	6,945	48,239	85·6	5,552	9·8	2,591	4·6	56,382	8·7	7·0	4·3	8·1	6·33	0·73	0·34	7·40
	Total, All Operations	34,195	36·3	32,203	34·2	27,769	29·5	94,167	394,171	51·7	202,785	26·6	164,865	21·6	761,821	11·5	6·3	5·9	8·1	51·74	26·62	21·64	100·00

W.A. HOSPITALS, 1971

Patients Discharged by Operation Group and Type of Hospital

Code of Surgical Procedures	Operation Groups	DISCHARGES														
		Metropolitan								Country						State Total
		Teaching		Private		Government		Total		Private		Govt. and Board		Total		
		Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	Number	% for Group	
001–049	Nervous Sustem	1,043	61·8	472	27·9	35	2·1	1,550	91·8	9	0·5	130	7·7	139	8·2	1,689
061–089	Endocrine System	454	63·9	171	24·1	19	2·7	644	90·7	6	0·8	60	8·5	66	9·3	710
100–189	Eye	1,348	40·8	1,528	46·3	72	2·2	2,948	89·3	38	1·2	317	9·6	355	10·7	3,303
190–249	Ear, Nose and Throat	2,642	24·4	5,066	46·8	1,354	12·5	9,062	83·7	126	1·2	1,638	15·1	1,764	16·3	10,826
250–299	Upper Alimentary Tract	951	18·4	1,391	26·9	515	9·9	2,857	55·2	590	11·4	1,730	33·4	2,320	44·8	5,177
300–349	Thorax	1,093	93·4	25	2·1	10	0·9	1,128	96·4	....	....	42	3·6	42	3·6	1,170
380–389	Breast	206	16·0	717	55·7	155	12·0	1,078	83·8	26	2·0	183	14·2	209	16·2	1,287
400–559	Abdomen	4,084	31·6	3,992	30·9	1,831	14·2	9,907	76·7	237	1·8	2,769	21·4	3,006	23·3	12,913
560–669	Urinary and Male Genital Organs	2,510	36·4	2,568	37·2	650	9·4	5,728	83·0	72	1·0	1,103	16·0	1,175	17·0	6,903
671–739	Female Genital Tract	1,946	14·9	4,880	37·2	3,334	25·4	10,160	77·5	289	2·2	2,653	20·2	2,942	22·5	13,102
740–779	Obstetric....	3,698	43·9	2,407	28·6	1,780	21·1	7,885	93·6	50	0·6	488	5·8	538	6·4	8,423
780–879	Orthopaedic	4,970	47·6	3,045	29·2	496	4·8	8,511	81·5	105	1·0	1,824	17·5	1,929	18·5	10,440
880–909	Peripheral Circulation	487	26·9	786	43·5	219	12·1	1,492	82·5	36	2·0	280	15·5	316	17·5	1,808
910–939	Skin and Subcutaneous Tissue	3,205	33·8	2,559	27·0	1,179	12·4	6,943	73·3	221	2·3	2,307	24·4	2,528	26·7	9,471
940–999	Other Surgical Procedures	5,558	80·0	700	10·1	151	2·2	6,409	92·3	91	1·3	445	6·4	536	7·7	6,945
	Total, All Operations	34,195	36·3	30,307	32·2	11,800	12·5	76,302	81·0	1.896	2·0	15,969	17·0	17,865	19·0	94,167

W.A. HOSPITALS

Accidents, Poisoning and Violence—Discharged During 1970

I.C.D. Categories	External Cause	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent. of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Dis-charged	Trans-ferred	Died	Deaths per 1,000 Separations
800–807	Railway Accidents	32	3	562	50	17·6	16·7	0·23	0·02	31	3	1	28
810–819	Motor Vehicle Traffic Accidents	3,222	1,629	34,182	18,343	10·6	11·3	13·79	7·40	4,550	222	79	16
820–823	Motor Vehicle Non-Traffic Accidents	70	16	1,044	192	14·9	12·0	0·42	0·08	84	2	....	....
825–827	Other Road Vehicle Accidents	264	155	1,808	988	6·9	6·4	0·73	0·40	409	10	....	....
830–838	Water Transport Accidents	41	4	381	57	9·3	14·3	0·15	0·02	45	....	....	....
840–845	Air and Space Transport Accidents	7	1	352	2	50·3	2·0	0·14	0·00	8	....	....	....
850–859	Accidental Poisoning by Drugs and Medicaments	282	285	1,650	2,528	5·9	8·8	0·67	1·02	552	11	4	7
860–869	Accidental Poisoning by Other Solid and Liquid Substances	417	234	1,396	535	3·4	2·3	0·56	0·22	644	5	2	3
870–877	Accidental Poisoning by Gases and Vapours	20	4	60	5	3·0	1·3	0·02	0·00	24	....	....	....
880–887	Accidental Falls	3,767	2,606	31,072	34,213	8·3	13·1	12·54	13·80	5,982	318	73	11
890–899	Accidents Caused by Fires and Flames	484	214	6,648	2,635	13·7	12·3	2·68	1·06	665	26	7	10
900–909	Accidents Due to Natural and Environmental Factors	389	215	1,908	1,180	4·9	5·5	0·77	0·48	589	11	4	6
910–929	Other Accidents	7,105	2,508	43,574	14,059	6·1	5·6	17·58	5·67	9,391	190	32	3
930–936	Surgical and Medical Complications and Mis-adventures	598	682	7,265	12,413	12·2	18·2	2·93	5·01	1,221	27	32	25
940–949	Late Effect of Accidental Injury	682	371	9,991	5,619	14·7	15·2	4·03	2·27	1,011	24	18	17
950–959	Suicide and Self-inflicted Injury	345	736	2,611	4,438	7·6	6·0	1·05	1·79	989	78	14	12
960–969	Homicide and Injury Purposely Inflicted by Other Persons	523	197	2,525	1,127	4·8	5·7	1·02	0·45	700	16	4	5
970–978	Legal Intervention	....	....	....	....	....	....	....	....	....	....	....	....
980–989	Injury Undetermined Whether Accidentally or Purposely Inflicted	180	242	1,244	1,138	6·9	4·7	0·50	0·46	386	29	7	16
990–999	Injury Resulting from Operations of War	5	....	55	....	11·0	....	0·02	....	5	....	....	....
	Total	18,433	10,102	148,328	99,522	8·0	9·9	59·85	40·15				
	Grand Total, Male and Female	28,535		247,850		9·0		100·00		27,286	972	277	9

I.C.D. Code	External Cause of Injury	Patients Age and Hospital Stay	Fracture of Spine, Skull and Trunk		Fracture of Upper Limb		Fracture of Lower Limb		Dislocation Without Fracture		Sprain and Strain of Join and Mus
			N800–N809		N810–N819		N820–N829		N830–N839		N840–N8
			M	F	M	F	M	F	M	F	M
E800–807	Railway Accidents	Patients	6	1	2	1	5	....	1	....	....
		Avge. Age	46	15	59	39	34	....	53	....	....
		Avge. Stay ...	17·8	37·0	33·5	12·0	26·2	....	1·0	....	....
E810–819	Motor Vehicle Traffic Accidents	Patients . .	453	238	199	101	355	150	53	22	83
		Avge. Age	33	34	28	38	30	32	30	37	33
		Avge. Stay	20·5	19·5	11·7	13·2	30·4	35·3	11·6	12·7	5·0
E820–823	Motor Vehicle Non-Traffic Accidents....	Patients	14	3	9	1	6	....	3	....	3
		Avge. Age	32	26	20	55	17	....	22	....	26
		Avge. Stay	45·2	41·3	3·3	4·0	18·5	....	6·0	....	5·0
E825–827	Other Road Vehicle Accidents	Patients	19	12	54	31	21	20	9	6	4
		Avge. Age	24	16	15	14	21	19	25	21	40
		Avge. Stay	5·9	7·1	3·1	3·4	26·7	25·1	4·3	3·7	8·3
E830–838	Water Transport Accidents	Patients	7	....	5	....	4	....	1	....	3
		Avge. Age	40	....	34	....	28	....	55	....	29
		Avge. Stay	11·3	....	9·2	....	31·8	....	2·0	....	7·7
E840–845	Air and Space Transport Accidents	Patients	2	..	1	....	3	....	1	....	....
		Avge. Age	25	...	23	....	30	....	33	....	....
		Avge. Stay	90·0	...	119·0	....	17·3	....	1·0	....	....
E850–859	Accidental Poisoning by Drugs and Medicaments	Patients	....	. ..	....	....	....	....	....	....	....
		Avge. Age	....	. .	....	....	....	....	....	....	....
		Avge. Stay	....	..	....	....	....	....	....	....	....
E860–869	Accidental Poisoning by Other Solid and Liquid Substances	Patients	....	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
E870–877	Accidental Poisoning by Gases and Vapours	Patients	....	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
E880–887	Accidental Falls	Patients	648	275	1,209	964	892	827	198	65	115
		Avge. Age	32	45	22	38	38	61	29	45	31
		Avge. Stay	7·7	10·9	3·7	4·8	17·2	27·0	5·1	5·7	6·8
E890–899	Accidents Caused by Fires and Flames	Patients	....	....	1	....	....	....	....	....	....
		Avge. Age	....	....	39	....	....	....	....	....	....
		Avge. Stay	....	....	56·0	....	....	....	....	....	....
E900–909	Accidents Due to Natural and Environmental Factors	Patients	9	2	4	....	14	3	3	....	....
		Avge. Age	28	35	31	....	37	53	37	....	....
		Avge. Stay	3·7	20·0	1·5	....	21·3	26·3	8·3	....	....
E910	Accidental Drowning & Submersion	Patients	3	1	....	....	1	....	3	....	1
		Avge. Age	20	13	....	....	14	....	28	....	22
		Avge. Stay	16·0	19·0	....	....	1·0	....	1·0	....	8·0
E911–912	Inhalation and Ingestion of Food and Other Objects	Patients	....	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
E914–915	Foreign Body Accidentally Entering Eye or Orifice	Patients	....	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
E920	Accidents Caused by Cutting and Piercing Instruments	Patients	....	....	35	5	6	....	3	....	....
		Avge. Age	....	....	41	35	35	....	54	....	....
		Avge. Stay ...	....	....	4·8	5·6	9·7	....	3·0	....	....
E913 E916–919 E921–929	Other Accidents	Patients	192	26	154	33	125	21	315	89	685
		Avge. Age	29	25	29	25	32	31	32	35	34
		Avge. Stay	15·3	9·0	7·5	5·6	17·3	7·7	7·2	7·4	6·4
E930–936	Surgical and Medical Complications and Misadventures	Patients	....	....	....	....	....	2	....	....	....
		Avge. Age	....	....	....	....	....	61	....	....	....
		Avge. Stay	....	....	....	....	....	23·5	....	....	....
E940–949	Late Effects of Accidental Injury	Patients	35	9	40	11	48	22	8	....	7
		Avge. Age	29	26	24	32	35	53	29	....	39
		Avge. Stay	18·9	17·1	10·4	9·4	23·3	37·9	7·3	....	16·6
E950–959	Suicide and Self-Inflicted Injury	Patients	5	1	1	....	....	....	....	....	....
		Avge. Age	31	35	27	....	....	....	....	....	....
		Avge. Stay	19·4	36·0	1·0	....	....	....	....	....	....
E960–969	Homicide and Injury Purposely Inflicted by Other Persons	Patients	147	25	31	5	7	4	20	1	6
		Avge. Age	32	32	25	35	33	34	27	19	40
		Avge. Stay	6·1	5·2	4·0	7·6	14·0	3·3	7·1	2·0	3·7
E970–978	Legal Intervention	Patients	....	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
E980–989	Injury Undetermined Whether Accidentally or Purposely Inflicted	Patients	2	....	1	1	....	....	....	....	....
		Avge. Age	44	....	24	6	....	....	....	....	....
		Avge. Stay	28·5	....	7·0	1·0	....	....	....	....	....
E990–999	Injury Resulting from Operations of War	Patients	. ..	....	....	....	....	....	....	....	....
		Avge. Age	....	....	....	....	....	....	....	....	....
		Avge. Stay	....	....	....	....	....	....	....	....	....
TOTALS	All External Causes	Patients	1,542	593	1,746	1,153	1,487	1,049	618	183	907
		Avge. Age	32	38	24	37	35	55	30	38	34
		Avge. Stay	13·0	14·3	5·2	5·6	20·8	27·9	6·9	7·3	6·4

W.A. HOSPITAL DISCHARGES, 1971.

ternal Cause and Nature of Injury of Accidents, Poisoning and Violence

NATURE OF INJURY

Intracranial Injury Without Skull Fracture		Internal Injury of Chest, Abdomen and Pelvis		Laceration and Open Wound of Head, Neck and Trunk		Laceration and Open Wound of Upper Limb		Laceration and Open Wound of Lower Limb		Laceration and Open Wound of Multiple Location		Superficial Injury		Contusion and Crushing With Intact Skin		Effects of Foreign Body		Burn		Injury to Nerves and Spinal Cord		Adverse Effect of Medicinal Agents		Adverse Effect of Non-Medicinal Substances		Other Adverse Effects		Total	
N850–N854		N860–N869		N870–N879		N880–N887		N890–N897		N900–N907		N9:0–N918		N920–N929		N930–N939		N940–N949		N950–N959		N960–N979		N980–N989		N990–N999			
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2 9 2·5	....	....	....	....	....	3 28 16·7	1 1 1·0	3 27 37·3	....	....	....	....	....	2 20 3·5	....	....	....	....	....	1 47 5·0	....	....	....	....	....	7 45 11·0	....	32 37 17·6	3 18 16·7
961 25 4·7	462 25 6·1	92 29 12·0	41 35 17·1	305 28 5·9	168 28 5·5	56 27 7·5	14 44 12·4	40 28 12·9	27 29 8·4	105 25 3·6	33 29 4·0	87 26 3·2	35 23 4·2	121 26 3·0	66 30 3·8	....	....	12 24 18·8	1 20 28·0	13 34 5·5	10 37 7·3	....	....	....	....	275 28 3·0	178 28 3·7	3,210 28 10·6	1,617 30 11·2
16 22 3·9	4 14 1·0	....	....	3 32 21·3	2 24 1·0	1 21 3·0	....	2 20 14·5	1 39 35·0	....	....	2 10 5·5	....	7 34 5·4	2 1 2·0	....	....	....	....	1 28 2·0	....	....	....	....	....	3 28 9·0	1 14 1·0	70 25 14·9	15 23 11·7
90 14 4·6	48 14 1·9	11 23 6·0	2 13 10·0	6 8 1·5	6 11 4·7	6 16 7·7	1 26 1·0	19 18 6·4	4 8 5·8	2 10 6·0	....	3 12 2·3	3 28 7·0	4 13 6·3	10 18 2·7	....	....	....	....	1 58 17·0	....	....	....	....	....	13 19 6·1	9 14 1·6	262 17 6·5	153 15 6·1
3 25 4·7	1 31 1·0	....	....	1 26 44·0	....	5 32 2·0	1 8 43·0	2 17 2·0	....	1 35 7·0	1 11 12·0	....	1 40 1·0	2 23 1·0	....	....	....	....	....	....	....	....	....	2 19 1·0	....	5 44 4·2	....	41 33 9·3	4 23 14·3
....	....	....	....	....	....	....	....	....	....	....	....	....	1 19 2·0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7 28 50·3	1 19 2·0
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	219 10 2·8	214 15 3·0	....	....	....	....	219 10 2·8	214 15 3·0
2 22 1·0	....	....	....	....	....	....	....	....	1 7 3·0	....	....	....	....	....	....	....	....	....	1 19 7·0	....	....	....	....	410 5 2·7	230 3 2·2	....	....	412 5 2·7	232 3 2·2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20 35 3·0	4 9 1·3	....	....	20 35 3·0	4 9 1·3
354 20 2·6	163 19 3·0	25 22 9·7	12 25 7·5	72 33 4·1	34 29 2·5	12 35 8·2	3 69 4·7	13 30 11·8	9 55 8·0	3 34 5·7	1 14 1·0	11 37 4·5	6 20 7·8	55 34 5·7	63 47 13·1	1 21 7·0	....	1 85 9·0	....	4 44 89·8	4 45 7·8	....	....	....	....	107 29 5·0	79 45 6·8	3,720 29 7·9	2,561 46 12·9
....	....	....	....	....	....	....	....	....	....	....	1 47 3·0	....	....	....	....	....	....	478 21 13·6	210 20 12·3	1 15 8·0	....	1 55 24·0	....	2 28 2·0	....	....	....	483 21 13·7	211 20 12·3
2 26 7·0	3 15 3·0	5 31 8·2	2 11 6·5	26 11 7·8	12 3 4·8	13 27 2·5	3 64 13·3	4 44 6·5	5 38 3·0	3 17 4·7	3 55 12·3	19 26 1·9	10 22 3·0	11 34 7·8	1 8 1·0	....	....	....	....	....	....	....	....	193 25 2·2	108 23 3·6	76 34 7·8	58 42 7·5	382 27 4·8	211 29 5·5
2 32 2·0	1 32 12·0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18 20 1·9	11 8 1·5	28 21 3·5	13 10 3·6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	58 30 2·3	50 32 1·7	....	....	....	....	....	....	....	....	....	....	58 30 2·3	50 32 1·7
....	....	....	7 66 5·9	5 26 7·0	3 29 9·7	....	....	....	....	....	....	3 42 6·7	2 1 4·0	6 26 7·0	....	232 24 3·2	176 24 2·3	1 15 1·0	....	....	....	....	....	....	....	....	....	257 24 3·4	188 19 2·5
11 25 1·9	4 21 2·0	9 22 6·8	3 19 6·0	401 24 4·1	182 22 3·5	1,041 30 3·8	193 28 2·9	562 22 6·7	232 22 4·8	105 28 4·4	50 32 5·4	15 18 3·4	12 20 7·4	3 27 8·0	2 2 3·0	1 39 2·0	....	....	....	35 26 6·4	8 33 3·1	....	....	....	....	4 20 7·0	....	2,231 27 4·7	691 24 4·0
767 21 2·7	301 20 2·8	70 27 6·9	17 35 8·0	186 27 5·9	74 25 4·0	262 30 5·3	47 23 4·9	96 29 11·5	24 43 12·3	14 45 5·3	6 41 3·5	117 28 4·7	56 25 6·0	478 28 5·5	185 33 5·7	1 20 293·0	1 25 5·0	336 21 10·6	138 14 13·2	32 32 6·6	11 45 9·5	....	....	1 44 6·0	....	656 31 7·2	255 38 7·9	4,468 29 7·0	1,542 31 6·7
....	....	....	1 78 123·0	....	....	....	....	....	....	....	....	....	....	....	1 46 51·0	....	....	....	1 66 58·0	....	....	63 52 7·3	102 59 31·4	....	....	324 34 6·0	324 34 8·8	387 37 6·2	431 41 14·7
19 26 7·1	5 17 10·0	10 23 3·5	....	22 21 6·5	10 18 4·2	22 25 7·9	7 16 12·0	10 29 17·6	8 8 8·4	2 11 7·5	....	1 58 38·0	....	1 15 18·0	....	1 18 15·0	....	30 8 15·2	16 14 14·0	15 28 4·5	8 29 2·4	2 36 15·0	....	8 3 8·5	....	192 39 14·8	134 45 13·0	473 31 13·9	242 38 14·2
4 36 3·5	....	2 40 20·0	1 17 4·0	6 33 11·0	4 35 17·3	30 29 14·9	25 26 4·2	1 34 49·0	....	1 29 6·0	....	1 20 1·0	....	....	....	2 32 5·5	....	1 22 50·0	....	....	1 37 2·0	263 32 5·8	680 29 5·7	13 29 2·8	9 29 3·3	2 25 8·5	5 28 27·6	332 31 7·1	726 29 5·9
144 29 3·4	52 32 3·1	7 31 9·0	5 29 22·0	63 32 4·0	33 35 5·3	12 30 2·7	....	7 26 3·4	3 37 4·0	5 34 3·2	10 36 8·0	5 38 5·2	6 36 2·2	27 33 2·9	20 34 5·2	....	....	2 50 15·0	3 28 34·3	3 31 19·7	1 30 7·0	....	....	....	....	30 23 3·7	25 25 5·5	516 30 4·8	197 32 5·7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5 17 3·0	....	2 35 14·0	1 17 12·0	13 27 3·5	15 34 3·4	9 34 6·2	4 34 1·5	1 28 3·0	2 39 1·5	2 28 1·5	3 36 3·3	....	....	5 19 4·2	3 51 2·7	....	....	3 24 4·7	....	....	....	90 42 5·6	190 31 3·7	34 38 8·1	8 47 8·9	5 32 6·6	4 14 3·0	172 37 6·2	231 31 3·8
....	....	....	....	1 21 12·0	....	1 33 5·0	....	1 24 27·0	....	1 54 7·0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 20 4·0	....	5 30 11·0	....
2,382 23 3·7	1,044 22 4·3	233 27 9·3	92 34 13·8	1,110 27 5·2	543 25 4·4	1,473 30 4·6	299 28 4·2	761 23 8·1	316 25 5·9	244 28 4·1	108 33 5·2	264 27 4·1	132 25 5·3	713 28 5·1	353 35 6·6	296 25 4·1	227 26 2·2	864 21 12·6	370 18 13·1	106 30 9·7	43 37 6·1	638 28 5·0	1,186 30 7·2	683 14 2·9	359 11 2·8	1,718 32 6·9	1,083 36 7·9	17,785 27 7·6	9,537 33 9·1

	Injury to Nerves and Spinal Cord		Adverse Effect of Medicinal Agents		Adverse Effect of Non-Medicinal Substances		Other Adverse Effects		Total	
9	N950–N959		N960–N979		N980–N989		N990–N999			
F	M	F	M	F	M	F	M	F	M	F
...	1	....	....	....	....	....	7	....	32	3
...	47	....	....	....	....	....	45	....	37	18
...	5·0	....	....	....	....	....	11·0	....	17·6	16·7
1	13	10	....	....	....	....	275	178	3,210	1,617
20	34	37	....	....	....	....	28	28	28	30
·0	5·5	7·3	....	....	....	....	3·0	3·7	10·6	11·2
..	1	....	....	....	....	....	3	1	70	15
..	28	....	....	....	....	....	28	14	25	23
..	2·0	....	....	....	....	....	9·0	1·0	14·9	11·7
..	1	....	....	....	....	....	13	9	262	153
..	58	....	....	....	....	....	19	14	17	15
..	17·0	....	....	....	....	....	6·1	1·6	6·5	6·1
..	....	....	....	....	2	....	5	....	41	4
..	....	....	....	....	19	....	44	....	33	23
..	....	....	....	....	1·0	....	4·2	....	9·3	14·3
..	....	....	....	....	....	....	....	....	7	1
..	....	....	....	....	....	....	....	....	28	19
..	....	....	....	....	....	....	....	....	50·3	2·0
..	....	....	219	214	....	....	....	....	219	214
..	....	....	10	15	....	....	....	....	10	15
..	....	....	2·8	3·0	....	....	....	....	2·8	3·0
1	....	....	....	....	410	230	....	....	412	232
19	....	....	....	....	5	3	....	....	5	3
·0	....	....	....	....	2·7	2·2	....	....	2·7	2·2
..	....	....	....	....	20	4	....	....	20	4
..	....	....	....	....	35	9	....	....	35	9
..	....	....	....	....	3·0	1·3	....	....	3·0	1·3
..	4	4	....	....	....	....	107	79	3,720	2,561
..	44	45	....	....	....	....	29	45	29	46
..	89·8	7·8	....	....	....	....	5·0	6·8	7·9	12·9
10	1	....	1	....	2	....	....	....	483	211
20	15	....	55	....	28	....	....	....	21	20
·3	8·0	....	24·0	....	2·0	....	....	....	13·7	12·3
..	....	....	....	....	193	108	76	58	382	211
..	....	....	....	....	25	23	34	42	27	29
..	....	....	....	....	2·2	3·6	7·8	7·5	4·8	5·5
..	....	....	....	....	....	....	18	11	28	13
..	....	....	....	....	....	....	20	8	21	10
..	....	....	....	....	....	....	1·9	1·5	3·5	3·6
..	....	....	....	....	....	....	....	....	58	50
..	....	....	....	....	....	....	....	....	30	32
..	....	....	....	....	....	....	....	....	2·3	1·7
..	....	....	....	....	....	....	....	....	257	188
..	....	....	....	....	....	....	....	....	24	19
..	....	....	....	....	....	....	....	....	3·4	2·5
..	35	8	....	....	....	....	4	....	2,231	691
..	26	33	....	....	....	....	20	...	27	24
..	6·4	3·1	....	....	....	....	7·0	....	4·7	4·0
38	32	11	....	....	1	....	656	255	4,468	1,542
14	32	45	....	....	44	....	31	38	29	31
·2	6·6	9·5	....	....	6·0	....	7·2	7·9	7·0	6·7
1	....	....	63	102	....	....	324	324	387	431
66	....	....	52	59	....	....	34	34	37	41
·0	....	....	7·3	31·4	....	....	6·0	8·8	6·2	14·7
16	15	8	2	....	8	....	192	134	473	242
14	28	29	36	....	3	....	39	45	31	38
·0	4·5	2·4	15·0	....	8·5	....	14·8	13·0	13·9	14·2
..	....	1	263	680	13	9	2	5	332	726
..	....	37	32	29	29	29	25	28	31	29
..	....	2·0	5·8	5·7	2·8	3·3	8·5	27·6	7·1	5·9
3	3	1	....	....	....	....	30	25	516	197
28	31	30	....	....	....	....	23	25	30	32
·3	19·7	7·0	....	....	....	....	3·7	5·5	4·8	5·7
	....	....	....	....	....	....	....	....	....	....
	....	....	....	....	....	....	....	....	....	....
	....	....	....	....	....	....	....	....	....	....
	....	....	90	190	34	8	5	4	172	231
	....	....	42	31	38	47	32	14	37	31
..	....	....	5·6	3·7	8·1	8·9	6·6	3·0	6·2	3·8
	..	.. .	....	....	....	....	1	....	5	....
	.	....	....	....	....	....	20	....	30	....
.	..	....	....	....	....	....	4·0	....	11·0	....
70	106	43	638	1,186	683	359	1,718	1,083	17,785	9,537
1	30	37	28	30	14	11	32	36	27	33
·1	9·7	6·1	5·0	7·2	2·9	2·8	6·9	7·9	7·6	9·1

HOSPITAL DISCHARGES, 1971

Perth Statistical Division

Hospital Name	Type	Number of Beds	Number of Discharges	Per cent of Metropolitan Discharges
Royal Perth	(1)	904	25,124	18·59
St. John of God, Subiaco	(2)	393	14,048	10·40
Princess Margaret (Children)	(1)	325	12,802	9·50
Fremantle....	(1)	273	9,168	6·78
King Edward Memorial (Women)	(1)	233	7,689	5·79
Sir Charles Gairdner	(1)	329	7,634	5·68
St. Anne's....	(2)	212	6,783	5·02
Repatriation	(5)	361	5,342	3·95
Swan Districts	(3)	71	4,982	3·68
Osborne Park	(3)	99	4,618	3·41
Mount	(2)	93	4,236	3·13
St. John of God, Belmont	(2)	125	3,920	2·90
Bentley	(3)	70	3,680	2·72
South Perth Community	(2)	67	3,463	2·56
Armadale-Kelmscott	(3)	71	3,326	2·46
Bethesda	(2)	52	2,564	1·89
Westminster	(2)	24	2,191	1·62
Hawthorn	(3)	29	1,907	1·41
Devonleigh	(3)	35	1,845	1·36
Heathcote....	(4)	121	1,587	1·17
St. Joseph's	(2)	37	1,536	1·13
Woodside	(3)	40	1,492	1·10
Morna	(2)	21	1,390	1·02
Avro	(2)	25	1,010	0·74
Claremont....	(4)	1,113	893	0·66
Kwinana	(2)	12	574	0·72
Lesmurdie	(2)	17	419	0·31
Lucknow	(2)	22	299	0·22
Harrow	(2)	18	192	0·14
Hillcrest	(2)	15	142	0·10
Niola	(2)	14	113	0·08
Wooroloo	(3)	7	51	0·03
St. Gerard's	(2)	6	36	0·02
Lemnos	(4)	122	20	0·01
Total	....	5,356	135,076	100·00

(1) Teaching Hospital.
(2) Private Hospital.
(3) Government and Board Hospital.
(4) Mental Health Services.
(5) Commonwealth Repatriation.

PERTH STATISTICAL DIVISION, 1971

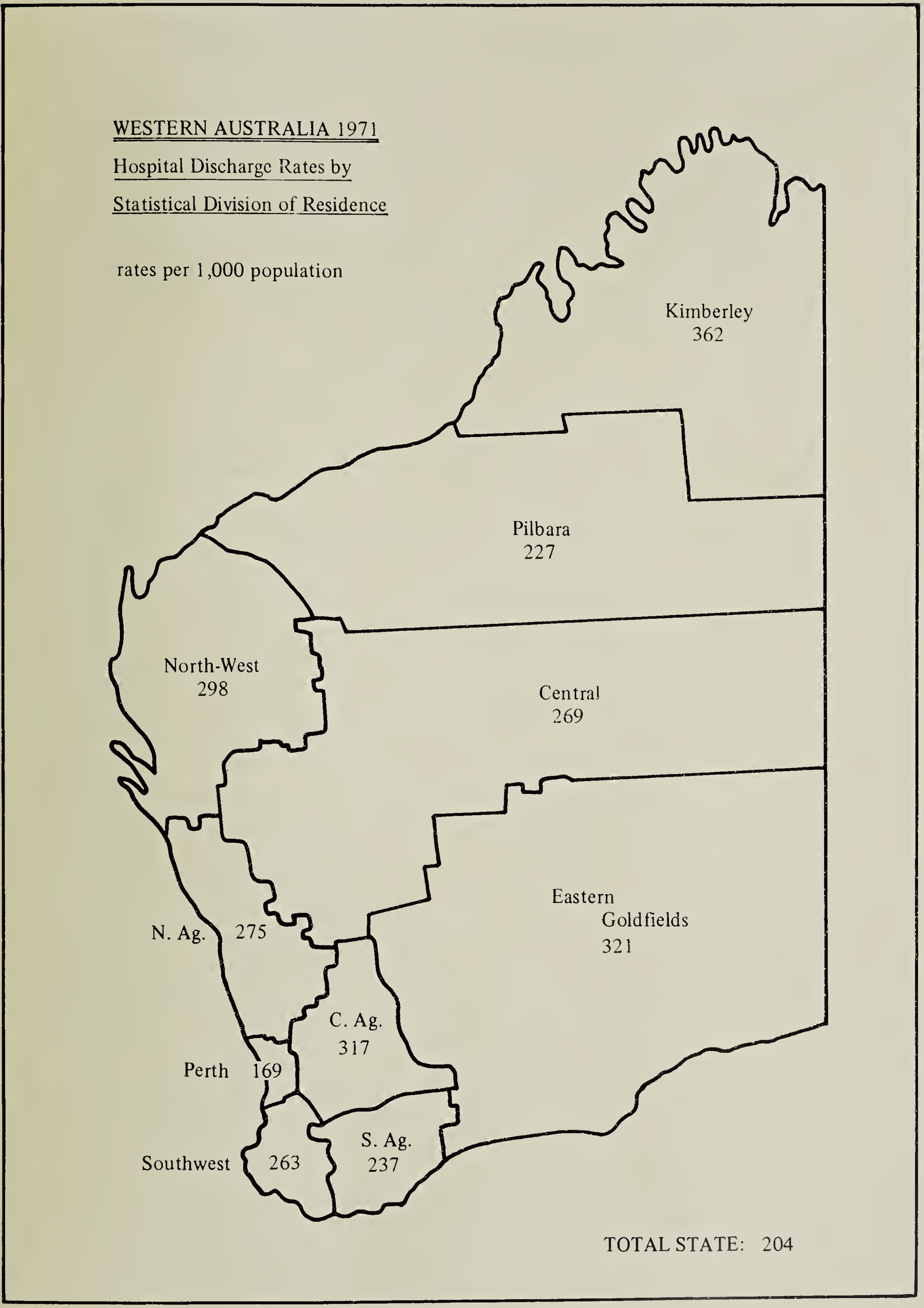
Hospitalised Non-Metropolitan Patients, by Statistical Division of Residence and Type of Hospital

Statistical Division of Residence	Discharges				
	Number	Per cent			
		Total	Teaching	Other Government and Board	Private
Southwest	3,782	18·6	10·8	2·1	5·7
Southern Agricultural	1,599	14·9	8·6	1·1	5·2
Central Agricultural	2,698	15·7	7·8	1·4	6·5
Northern Agricultural	2,495	21·3	10·1	3·2	8·0
Eastern Goldfields	1,582	11·6	6·5	1·1	4·0
Central	409	24·8	18·0	1·0	5·8
Northwest	404	11·7	6·6	0·7	4·4
Pilbara	671	10·0	5·9	0·5	3·6
Kimberley	395	7·7	6·0	0·2	1·5

DISCHARGES FROM WESTERN AUSTRALIAN HOSPITALS BY STATISTICAL DIVISION OF RESIDENCE 1971

Statistical Division	Number*	Rate/1,000 population
Perth	118,592	169
Southwest	20,387	263
Southern Agricultural	10,713	237
Central Agricultural	17,118	317
Northern Agricultural	11,737	275
Eastern Goldfields	13,634	321
Central	1,651	269
Northwest	3,442	298
Pilbara	6,695	227
Kimberley	5,115	362
Metropolitan (Perth)	118,592	189
Rural (All Others)	90,492	278
Total State*	209,084	204

* Does not include 2,265 discharges for which geographical location was inaccurate or incomplete. Total discharges for state in 1971 were: 211,349.

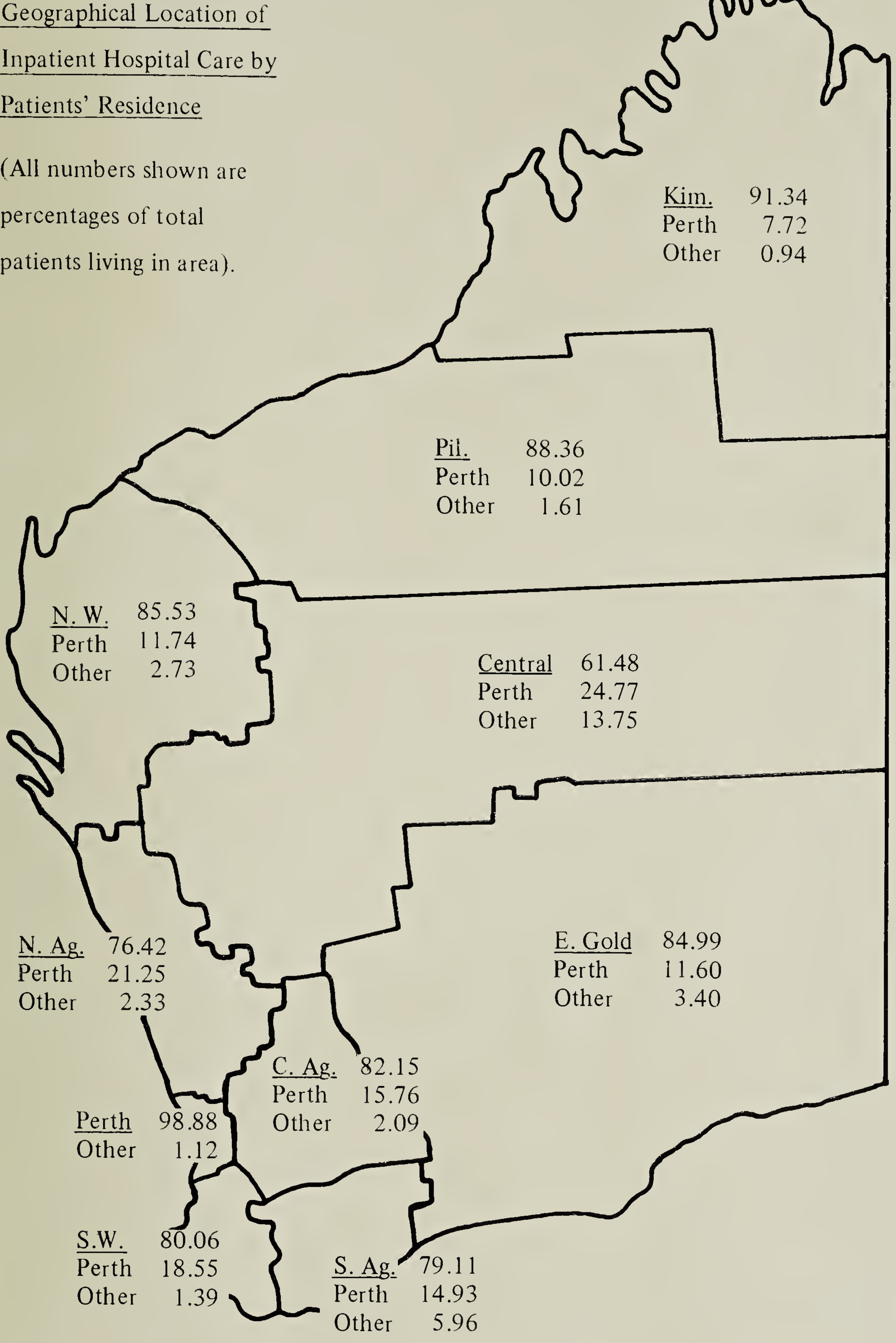

WESTERN AUSTRALIA 1971
Hospital Discharge Rates by
Statistical Division of Residence
rates per 1,000 population
Kimberley
362
Pilbara
227
North-West
298
Central
269
Eastern
Goldfields
321
N. Ag.
275
C. Ag.
317
Perth
169
Southwest
263
S. Ag.
237
TOTAL STATE: 204

GEOGRAPHICAL LOCATION OF INPATIENT HOSPITAL CARE, BY PATIENTS' RESIDENCE, W.A., 1971

Statistical Division of Residence	Statistical Division of Hospitalisation		
	Home	Perth	Other
	%	%	%
Perth	98·88	....	1·12
Southwest	80·06	18·55	1·39
Southern Agricultural	79·11	14·93	5·96
Central Agricultural	82·15	15·76	2·09
Northern Agricultural	76·42	21·25	2·33
Eastern Goldfields	84·99	11·60	3·40
Central	61·48	24·77	13·75
Northwest	85·53	11·74	2·73
Pilbara	88·36	10·02	1·61
Kimberley	91·34	7·72	0·94

WESTERN AUSTRALIA, 1971
Geographical Location of
Inpatient Hospital Care by
Patients' Residence

(All numbers shown are percentages of total patients living in area).



DISCHARGES FROM W.A. HOSPITALS FOR SELECTED I.C.D. CODES 1971

All Persons

Hospital		Alcoholic Psychosis		Alcoholism										Grand Total	
		291 All Types		303·0 Episodic		303·1 Habitual		303·2 Addiction		303·9 Unspecified		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
R.P.H.	Patients	17	4	....	....	....	....	93	35	34	10	127	45	144	49
	Length of Stay	153	67	....	....	....	....	757	428	94	15	851	443	1,004	510
	Mean Age	51	50	....	....	....	....	48	52	48	43	48	50	48	50
Fremantle	Patients	2	1	....	....	....	....	11	1	11	5	22	6	24	7
	Length of Stay	18	14	....	....	....	....	81	90	33	14	114	104	132	118
	Mean Age	44	44	....	....	....	....	43	50	33	48	38	48	39	47
S.C.G.H.	Patients	4	1	1	....	4	....	4	3	9	3	18	6	22	7
	Length of Stay	68	21	9	....	44	....	19	62	47	64	119	126	187	147
	Mean Age	45	54	64	....	42	....	44	50	52	58	49	54	48	54
Albany	Patients	2	....	....	....	....	....	1	....	11	5	12	5	14	5
	Length of Stay	9	....	....	....	....	....	3	....	598	16	601	16	610	16
	Mean Age	48	....	....	....	....	....	25	....	50	49	48	49	48	49
Armadale–Kelmscott	Patients	1	....	....	....	....	....	....	....	4	....	4	....	5	....
	Length of Stay	2	....	....	....	....	....	....	....	7	....	7	....	7	....
	Mean Age	56	....	....	....	....	....	....	....	47	....	47	....	49	....
Augusta	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bentley	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Beverley	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	50	....	50	....	50
Boddington	Patients	1	....	....	....	....	....	....	....	1	....	1	....	2	....
	Length of Stay	6	....	....	....	....	....	....	....	20	....	20	....	26	....
	Mean Age	31	....	....	....	....	....	....	....	46	....	46	....	39	....
Bridgetown	Patients	1	....	....	....	....	....	....	....	2	....	2	....	3	....
	Length of Stay	2	....	....	....	....	....	....	....	2	....	2	....	4	....
	Mean Age	45	....	....	....	....	....	....	....	55	....	55	....	52	....
Broome	Patients	....	....	....	....	....	....	1	....	4	1	5	1	5	1
	Length of Stay	....	....	....	....	....	....	2	....	17	2	19	2	19	2
	Mean Age	....	....	....	....	....	....	25	....	44	27	40	27	40	27
Bruce Rock	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	4	....	4	....	4
	Mean Age	....	....	....	....	....	....	....	....	....	52	....	52	....	52
Bunbury	Patients	1	....	....	....	....	....	....	....	17	1	17	1	18	1
	Length of Stay	5	....	....	....	....	....	....	....	159	10	159	10	164	10
	Mean Age	26	....	....	....	....	....	....	....	49	46	49	46	46	46
Busselton	Patients	....	....	....	....	....	....	1	1	2	....	3	1	3	1
	Length of Stay	....	....	....	....	....	....	14	73	7	....	21	73	21	73
	Mean Age	....	....	....	....	....	....	59	38	45	....	50	38	50	38
Carnarvon	Patients	....	....	....	....	....	....	....	....	13	4	13	4	13	4
	Length of Stay	....	....	....	....	....	....	....	....	110	17	110	17	110	17
	Mean Age	....	....	....	....	....	....	....	....	55	34	55	34	55	34
Collie	Patients	1	2	....	....	....	....	....	....	....	....	....	....	1	2
	Length of Stay	3	4	....	....	....	....	....	....	....	....	....	....	3	4
	Mean Age	52	42	....	....	....	....	....	....	....	....	....	....	52	42
Coolgardie	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	17	....	17	....	17	....
	Mean Age	....	....	....	....	....	....	....	....	55	....	55	....	55	....
Corrigin	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cunderdin	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	32	....	32	....	32	....
	Mean Age	....	....	....	....	....	....	....	....	66	....	66	....	66	....
Dalwallinu	Patients	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Length of Stay	....	....	....	....	....	....	....	....	1	2	1	2	1	2
	Mean Age	....	....	....	....	....	....	....	....	28	24	28	24	28	24
Dampier	Patients	1	....	....	....	....	....	....	....	2	....	2	....	3	....
	Length of Stay	2	....	....	....	....	....	....	....	2	....	2	....	4	....
	Mean Age	32	....	....	....	....	....	....	....	37	....	37	....	35	....
Denmark	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Derby	Patients	....	....	....	....	....	....	3	....	16	2	19	2	19	2
	Length of Stay	....	....	....	....	....	....	20	....	61	2	81	2	81	2
	Mean Age	....	....	....	....	....	....	37	....	42	30	41	30	41	30
Devonleigh	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Donnybrook	Patients	....	....	....	....	....	....	1	....	....	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	34	....	....	....	34	....	34	....
	Mean Age	....	....	....	....	....	....	72	....	....	....	72	....	72	....
Dumbleyung	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Eastern Districts Memorial	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Esperance	Patients	....	....	....	....	....	....	1	....	3	....	4	....	4	....
	Length of Stay	....	....	....	....	....	....	1	....	23	....	24	....	24	....
	Mean Age	....	....	....	....	....	....	28	....	41	....	38	....	38	....

DISCHARGES FROM W.A. HOSPITALS FOR SELECTED I.C.D. CODES 1971—*Continued*

All Persons

Hospital		Alcoholic Psychosis		Alcoholism										Grand Total	
		291 All Types		303·0 Episodic		303·1 Habitual		303·2 Addiction		303·9 Unspecified		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Exmouth	Patients	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Length of Stay	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Mean Age	....	....	....	....	....	....	....	....	35	33	35	33	35	33
Geraldton	Patients	1	....	....	....	....	....	....	....	4	4	4	4	5	4
	Length of Stay	24	....	....	....	....	....	....	....	36	14	36	14	60	14
	Mean Age	65	....	....	....	....	....	....	....	47	42	47	42	51	42
Gnowangerup	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Goomalling	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Mean Age	....	....	....	....	....	....	....	....	43	....	43	....	43	....
Harvey	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hawthorn	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kalgoorlie	Patients	3	....	....	....	....	....	2	....	19	2	21	2	24	2
	Length of Stay	9	....	....	....	....	....	7	....	187	9	194	9	203	9
	Mean Age	43	....	....	....	....	....	53	....	47	39	48	39	47	39
Katanning	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kojonup	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kondinin	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kununoppin	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	11	....	11	....	11	....
	Mean Age	....	....	....	....	....	....	....	....	61	....	61	....	61	....
Kununurra....	Patients	....	....	....	....	....	....	1	....	....	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	3	....	....	....	3	....	3	....
	Mean Age	....	....	....	....	....	....	39	....	....	....	39	....	39	....
Lake Grace....	Patients	....	....	....	....	....	....	....	....	4	....	4	....	4	....
	Length of Stay	....	....	....	....	....	....	....	....	25	....	25	....	25	....
	Mean Age	....	....	....	....	....	....	....	....	43	....	43	....	43	....
Laverton	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Leonora	Patients	....	....	....	....	....	....	....	....	4	....	4	....	4	....
	Length of Stay	....	....	....	....	....	....	....	....	20	....	20	....	20	....
	Mean Age	....	....	....	....	....	....	....	....	52	....	52	....	52	....
Marble Bar....	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Margaret River	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Meekatharra	Patients	2	....	....	....	....	....	2	....	3	2	5	2	7	2
	Length of Stay	5	....	....	....	....	....	4	....	4	3	8	3	13	3
	Mean Age	51	....	....	....	....	....	43	....	44	58	44	58	46	58
Merredin	Patients	....	....	....	....	....	....	....	....	4	....	4	....	4	....
	Length of Stay	....	....	....	....	....	....	...	....	19	....	19	....	19	....
	Mean Age	....	....	....	....	....	....	....	....	46	....	46	....	46	....
Moora	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Mean Age	....	....	....	....	....	....	....	....	50	....	50	....	50	....
Morawa	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	17	....	17	....	17
Mount Magnet	Patients	....	....	....	....	....	....	....	....	2	1	2	1	2	1
	Length of Stay	....	....	....	....	....	....	....	....	33	5	33	5	33	5
	Mean Age	....	....	....	....	....	....	....	....	61	71	61	71	61	71
Mount Newman	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mullewa	Patients	1	....	....	....	....	....	....	....	....	1	....	1	1	1
	Length of Stay	12	....	....	....	....	....	....	....	....	1	....	1	12	1
	Mean Age	53	....	....	....	....	....	....	....	....	45	....	45	53	45
Murray District	Patients	....	....	....	....	....	....	....	....	4	3	4	3	4	3
	Length of Stay	....	....	....	....	....	....	....	....	11	9	11	9	11	9
	Mean Age	....	....	....	....	....	....	....	....	61	47	61	47	61	47
Nannup	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Narembeen....	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	
	Length of Stay	....	....	....	....	....	....	....	....	2	....	2	....	2	
	Mean Age	....	....	....	....	....	....	....	....	44	....	44	....	44	
Narrogin	Patients	1	1	....	....	....	....	3	....	6	4	9	4	10	5
	Length of Stay	3	2	....	....	....	....	17	....	34	14	51	14	54	16
	Mean Age	43	38	....	....	....	....	38	....	49	40	45	40	45	40
Norseman	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	2		2	..	2	....
	Mean Age	....	....	....	....	....	....	....	....	24		24	..	24	..
Northam	Patients	1	....	....	....	....	....	....	....	3		3		4	..
	Length of Stay	3	....	....	....	....	....	....	....	4		4		7	
	Mean Age	48	....	....	....	....	....	....	....	36		36	..	39	
Northampton	Nil	....	....	....	....	....	....	....	....	....	..				

DISCHARGES FROM W.A. HOSPITALS FOR SELECTED I.C.D. CODES 1971—*Continued*

All Persons

Hospital		Alcoholic Psychosis		Alcoholism										Grand Total	
		291 All Types		303·0 Episodic		303·1 Habitual		303·2 Addiction		303·9 Unspecified		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
North Midlands District	Patients	1	....	....	....	....	....	....	....	....	....	....	....	1	....
	Length of Stay	13	....	....	....	....	....	....	....	....	....	....	....	13	....
	Mean Age	45	....	....	....	....	....	....	....	....	....	....	....	45	....
Onslow	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	3	....	3	....	3	....
	Mean Age	....	....	....	....	....	....	....	....	35	....	35	....	35	....
Osborne Park	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	4	....	4	....	4	....
	Mean Age	....	....	....	....	....	....	....	....	36	....	36	....	36	....
Pemberton	Patients	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Length of Stay	....	....	....	....	....	....	....	....	12	2	12	2	12	2
	Mean Age	....	....	....	....	....	....	....	....	42	52	42	52	42	52
Pingelly	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	34	....	34	....	34
Plantagenet	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	60	....	60	....	60
Port Hedland	Patients	2	....	....	....	....	....	1	....	22	1	23	1	25	1
	Length of Stay	12	....	....	....	....	....	10	....	143	2	153	2	165	2
	Mean Age	61	....	....	....	....	....	39	....	46	48	46	48	47	48
Port Hedland Nursing Home	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Quairading	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ravensthorpe	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Roebourne	Patients	3	....	....	....	....	....	....	....	2	....	2	....	5	....
	Length of Stay	16	....	....	....	....	....	....	....	6	....	6	....	22	....
	Mean Age	40	....	....	....	....	....	....	....	54	....	54	....	46	....
Southern Cross	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Mean Age	....	....	....	....	....	....	....	....	66	....	66	....	66	....
Swan Districts	Patients	....	....	....	....	....	....	....	....	5	....	5	....	5	....
	Length of Stay	....	....	....	....	....	....	....	....	27	....	27	....	27	....
	Mean Age	....	....	....	....	....	....	....	....	48	....	48	....	48	....
Tom Price	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Mean Age	....	....	....	....	....	....	....	....	59	....	59	....	59	....
Upper Blackwood	Patients	1	....	....	....	....	....	....	....	....	....	....	....	1	....
	Length of Stay	19	....	....	....	....	....	....	....	....	....	....	....	19	....
	Mean Age	43	....	....	....	....	....	....	....	....	....	....	....	43	....
Wagin	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Warren District	Patients	1	....	....	....	....	....	1	....	2	....	3	....	4	....
	Length of Stay	7	....	....	....	....	....	21	....	2	....	23	....	30	....
	Mean Age	32	....	....	....	....	....	53	....	48	....	50	....	46	....
Wickepin	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Williams	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Mean Age	....	....	....	....	....	....	....	....	Not Stated	....	Un-known	....	Un-known	....
Wittenoom	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wongan Hills	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Mean Age	....	....	....	....	....	....	....	....	33	....	33	....	33	....
Woodside	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wooroloo	Patients	1	....	....	....	....	....	....	....	....	....	....	....	1	....
	Length of Stay	1	....	....	....	....	....	....	....	....	....	....	....	1	....
	Mean Age	53	....	....	....	....	....	....	....	....	....	....	....	53	....
Wyalkatcham-Koorda	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	8	....	8	....	8	....
	Mean Age	....	....	....	....	....	....	....	....	55	....	55	....	55	....
Wyndham	Patients	1	....	....	....	....	....	2	....	4	1	6	1	7	1
	Length of Stay	13	....	....	....	....	....	4	....	23	1	27	1	40	1
	Mean Age	58	....	....	....	....	....	39	....	43	6	42	6	44	6
Yarloop	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Mean Age	....	....	....	....	....	....	....	....	43	....	43	....	43	....
York	Patients	....	....	....	....	....	....	1	....	3	....	4	....	4	....
	Length of Stay	....	....	....	....	....	....	1	....	30	....	31	....	31	....
	Mean Age	....	....	....	....	....	....	23	....	82	....	67	....	67	....
Avro	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bethesda	Patients	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Length of Stay	....	....	....	....	....	....	....	....	3	9	3	9	3	9
	Mean Age	....	....	....	....	....	....	....	....	59	50	59	50	59	50

DISCHARGES FROM W.A. HOSPITALS FOR SELECTED I.C.D. CODES 1971—*Continued*

All Persons

Hospital		Alcoholic Psychosis		Alcoholism										Grand Total	
		291 All Types		303·0 Episodic		303·1 Habitual		303·2 Addiction		303·9 Unspecified		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Harrow	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hillcrest	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kwinana	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lesmurdie	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lucknow	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Morna	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mount	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	6	....	6	....	6
	Mean Age	....	....	....	....	....	....	....	....	....	37	....	37	....	37
Niola	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St. Annes General	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	7	....	7	....	7	....
	Mean Age	....	....	....	....	....	....	....	....	50	....	50	....	50	....
St. Annes Maternity	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St. Gerards....	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St. Johns, Belmont	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	13	....	13	....	13	....
	Mean Age	....	....	....	....	....	....	....	....	40	....	40	....	40	....
St. Johns, Bunbury	Patients	....	....	....	....	....	....	....	....	4	1	4	1	4	1
	Length of Stay	....	....	....	....	....	....	....	....	33	5	33	5	33	5
	Mean Age	....	....	....	....	....	....	....	....	45	46	45	46	45	46
St. Johns, Geraldton	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St. Johns, Kalgoorlie	Patients	....	....	....	....	....	....	....	....	2	1	2	1	2	1
	Length of Stay	....	....	....	....	....	....	....	....	60	1	60	1	60	1
	Mean Age	....	....	....	....	....	....	....	....	57	36	57	36	57	36
St. Johns, Subiaco	Patients	....	....	....	....	....	....	2	....	5	....	7	....	7	....
	Length of Stay	....	....	....	....	....	....	29	....	92	....	121	....	121	....
	Mean Age	....	....	....	....	....	....	49	....	43	....	45	....	45	....
St. Josephs, Bicton	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
South Perth Community	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stirling	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Westminister	Nil	....	....	....	....	....	....	....	....	....	....	....	....	....	....
TOTAL	Patients	50	9	1	....	4	....	131	40	260	62	396	102	446	111
	Length of Stay	405	108	9	....	44	....	1,027	653	2,095	232	3,175	885	3,580	993
	Mean Age	48	47	64	....	42	....	46	51	47	43	47	46	47	46

NOTE.—Discharges from Repatriation General Hospital are not included.

DISCHARGES FROM W.A. HOSPITALS FOR SELECTED I.C.D. CODES, 1971

Aborigines

Hospital	Patients Age and Hospital Stay	Alcoholic Psychosis		Alcoholism										Grand Total	
		291		303·0		303·1		303·2		303·9		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
R.P.H.	Patients	....	....	....	....	....	....	3	5	1	1	4	6	4	6
	Length of Stay	....	....	....	....	....	....	39	69	2	2	41	71	41	71
	Mean Age	....	....	....	....	....	....	34	48	27	25	32	44	32	44
S.C.G.H.	Patients	1	....	....	....	....	....	....	....	....	....	....	....	1	....
	Length of Stay	2	....	....	....	....	....	....	....	....	....	....	....	2	....
	Mean Age	33	....	....	....	....	....	....	....	....	....	....	....	33	....
Albany	Patients	1	....	....	....	....	....	....	....	1	....	1	....	2	....
	Length of Stay	1	....	....	....	....	....	....	....	2	....	2	....	3	....
	Mean Age	31	....	....	....	....	....	....	....	32	....	32	....	32	....
Carnarvon	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	44	....	44	....	44	....
	Mean Age	....	....	....	....	....	....	....	....	61	....	61	....	61	....
Collie	Patients	....	1	....	....	....	....	....	....	....	....	....	....	....	1
	Length of Stay	....	2	....	....	....	....	....	....	....	....	....	....	....	2
	Mean Age	....	27	....	....	....	....	....	....	....	....	....	....	....	27
Dalwallinu	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	..	....	....	....	....	....	2	....	2	....	2
	Mean Age	....	....	....	....	....	....	....	....	....	24	....	24	....	24
Derby	Patients	....	....	....	....	....	....	....	....	2	2	2	2	2	2
	Length of Stay	....	....	....	....	....	....	....	....	6	2	6	2	6	2
	Mean Age	....	....	....	....	....	....	....	....	24	30	24	30	24	30
Geraldton	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	20	....	20	....	20
Kalgoorlie	Patients	1	....	....	....	....	....	....	....	1	2	1	2	2	2
	Length of Stay	5	....	....	....	....	....	....	....	3	9	3	9	8	9
	Mean Age	18	....	....	....	....	....	....	....	32	39	32	39	25	39
Leonora	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Mean Age	....	....	....	....	....	....	....	....	34	....	34	....	34	....
Meekatharra	Patients	....	....	....	....	....	....	....	....	1	2	1	2	1	2
	Length of Stay	....	....	....	....	....	....	....	....	1	3	1	3	1	3
	Mean Age	....	....	....	....	....	....	....	....	39	58	39	58	39	58
Murray District	Patients	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Length of Stay	....	....	....	....	....	....	....	....	1	1	1	1	1	1
	Mean Age	....	....	....	....	....	....	....	....	65	25	65	25	65	25
Narrogin	Patients	....	1	....	....	....	....	....	....	2	3	2	3	2	4
	Length of Stay	....	2	....	....	....	....	....	....	3	6	3	6	3	8
	Mean Age	....	38	....	....	....	....	....	....	40	38	40	38	40	38
Onslow	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	3	....	3	....	3	....
	Mean Age	....	....	....	....	....	....	....	....	35	....	35	....	35	....
Pingelly	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	34	....	34	....	34
Plantagenet	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	60	....	60	....	60
Port Hedland	Patients	....	....	....	....	....	....	....	....	2	....	2	....	2	....
	Length of Stay	....	....	....	....	....	....	....	....	4	....	4	....	4	....
	Mean Age	....	....	....	....	....	....	....	....	50	....	50	....	50	....
Wyndham	Patients	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Length of Stay	....	....	....	....	....	....	....	....	....	1	....	1	....	1
	Mean Age	....	....	....	....	....	....	....	....	....	6	....	6	....	6
Total	Patients	3	2	....	....	....	....	3	5	15	16	18	21	21	24
	Length of Stay	8	4	....	....	....	....	39	69	71	29	110	98	118	102
	Mean Age	27	33	....	....	....	....	34	48	41	35	40	38	38	38

DISCHARGES FROM METROPOLITAN TEACHING HOSPITALS FOR SELECTED I.C.D. CODES, 1971

(shown as secondary conditions only)

Persons

Hospital	Patients, Age and Hospital Stay	Alcoholic Psychosis		Alcoholism										Grand Total	
		291		303·0		303·1		303·2		303·9		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
R.P.H.	Patients	21	9	1	....	....	....	256	52	63	11	320	63	341	72
	Length of Stay	389	372	6	....	....	....	3,591	1,040	165	29	3,762	1,069	4,151	1,441
	Mean Age	54	55	43	....	....	....	45	53	32	41	42	51	43	52
Fremantle	Patients	7	2	....	....	....	....	12	5	48	19	60	24	67	26
	Length of Stay	112	28	....	....	....	....	126	85	792	422	918	507	1,030	535
	Mean Age	50	40	....	....	....	....	48	57	45	52	46	53	46	52
K.E.M.H.	Patients	....	1	....	....	....	....	....	1	..	2	....	3		4
	Length of Stay	....	1	....	....	....	....	....	1	..	5	....	6		7
	Mean Age	....	48	....	....	....	....	....	21	....	31	....	28		33
S.C.G.H.	Patients	5	3	1	2	6	2	28	10	19	7	54	21	59	24
	Length of Stay	152	270	14	139	62	26	619	312	338	152	1,033	629	1,185	899
	Mean Age	51	59	26	40	58	57	49	53	54	54	51	52	51	53
Total	Patients	33	15	2	2	6	2	296	68	130	39	434	111	467	126
	Length of Stay	653	671	20	139	62	26	4,336	1,438	1,295	608	5,713	2,211	6,366	2,882
	Mean Age	53	53	35	40	58	57	46	53	40	48	44	51	45	51

DISCHARGES FROM METROPOLITAN TEACHING HOSPITALS FOR SELECTED I.C.D. CODES, 1971

(shown as secondary conditions only)

Aborigines

Hospital	Patients, Age and Hospital Stay	Alcoholic Psychosis		Alcoholism										Grand Total	
		291		303·0		303·1		303·2		303·9		Total			
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
R.P.H.	Patients	2	1	....	....	....	....	8	5	1	2	9	7	11	8
	Length of Stay	56	55	....	....	....	....	154	45	1	4	155	49	211	104
	Mean Age	57	37	....	....	....	....	45	45	57	24	46	39	48	39
Fremantle	Patients	....	....	....	....	....	....	....	....	1	3	1	3	1	3
	Length of Stay	....	....	....	....	....	....	....	....	1	106	1	106	1	106
	Mean Age	....	....	....	....	....	....	....	....	29	39	29	39	29	39
S.C.G.H.	Patients	....	....	....	....	....	....	....	....	1	....	1	....	1	....
	Length of Stay	....	....	....	....	....	....	....	....	5	....	5	....	5	....
	Mean Age	....	....	....	....	....	....	....	....	33	....	33	....	33	....
Total	Patients ...	2	1	....	....	....	....	8	5	3	5	11	10	13	11
	Length of Stay	56	55	....	....	....	....	154	45	7	110	161	155	217	210
	Mean Age	57	37	....	....	....	....	45	45	39	33	43	39	46	39

NUMBER OF DISCHARGES FROM TEACHING HOSPITALS WITH SECONDARY OR CONTRIBUTING CONDITION OF ALCOHOLISM WHERE PRIMARY REASON FOR ADMISSION IS ACCIDENTAL INJURY—1971

I.C.D. Code	External Cause	AGE GROUPS																											
		10–14		15–19		20–24		25–29		30–34		35–39		40–44		45–49		50–54		55–59		60–64		65–69		70		Not Stated		All Ages	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
E810–819	Motor vehicle traffic accidents	....	1	9	1	7	....	4	....	4	....	3	1	1	....	3	....	3	....	4	....	2	....	....	....	....	1	2	....	42	4
E825–827	Other road vehicle accidents	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	...
E850–859	Accidental Poisoning by Drugs and Medicaments	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	2	...
E880–887	Accidental Falls	....	....	1	....	....	....	3	....	4	....	2	....	3	....	2	2	5	1	7	1	8	2	1	....	2	3	....	....	38	9
E890–899	Accidents caused by Fires and Flames	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	1	....	....	....	....	....	4	....
E910–929	Other Accidents	....	....	2	....	1	....	....	....	1	....	2	....	....	1	....	....	3	....	1	....	2	....	1	1	....	....	....	....	13	2
E930–936	Surgical and Medical Complications and Misadventures	....	....	....	....	....	....	....	....	....	....	....	....	....	...	1	....	....	2	....	....	....	....	....	....	2	....	....	....	3	2
E940–949	Late Effects of Accidental Injury	....	....	....	....	....	....	....	....	1	....	1	....	2	1	1	....	1	....	....	1	....	....	....	....	....	....	....	....	6	2
E950–959	Suicide and Self-Inflicted Injury	....	....	1	1	3	....	4	....	3	....	8	1	3	6	2	2	....	2	2	....	1	....	1	1	1	....	....	1	29	14
E960–969	Homicide and Injury purposely inflicted by others	....	....	2	....	7	....	4	....	1	....	2	....	....	....	2	1	....	....	1	....	....	....	....	1	....	....	....	....	19	2
E980–989	Injury undetermined whether accidentally or purposely inflicted	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	2	....
	Total	....	1	15	2	18	....	15	....	14	....	19	2	10	8	14	5	14	5	15	2	13	2	6	3	5	4	2	1	160	35

DISCHARGES FROM TEACHING HOSPITALS BY PRINCIPAL CONDITION TREATED, WHERE SECONDARY OR CONTRIBUTING CONDITION IS ALCOHOLISM

1971 (INCLUDES ACCIDENTAL INJURY)

I.C.D. Codes	Principal Condition	AGE GROUPS																													
		10–14		15–19		20–24		25–29		30–34		35–39		40–44		45–49		50–54		55–59		60–64		65–69		70+		Not Stated		All Ages	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.
000–009	Intestinal Infectious Diseases	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
010–019	Tuberculosis	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	1	2
030–039	Other bacterial diseases	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	
090–099	Syphilis and other Venereal Diseases	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	
140–149	Miligant Neoplasm of Buccal Cavity and Pharynx	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	4	....	....	2	....	....	....	....	4	4
150–159	Malignant Neoplasm of Digestive Organs and Peritoneum	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	
160–163	Malignant Neoplasm of Respiratory system	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	2	....	....	....	5	
170–174	Malignant Neoplasm of Bone, Connective tissue, skin and Breast	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
200–209	Neoplasms of lymphatics and Haematopoietic tissue	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	
210–228	Benign Neoplasms	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
230–239	Neoplasms of unspecified Nature	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	2	
250–258	Diseases of other endocrine glands	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....
260–269	Avitaminoses and other nutritional deficiency	....	....	....	....	....	....	1	....	....	....	1	1	1	....	1	2	....	....	....	2	....	....	2	2	....	....	....	....	6	7
280–289	Diseases of blood and blood forming organs	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	2	....	....	....	....	1	....	1	....	....	....	....	4	2
290–299	Psychoses	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	....	....	....	4	1
300–309	Neuroses, personality disorders and other non-psychotic mental disorders	....	....	1	....	1	2	3	1	2	2	3	2	5	2	5	2	3	1	....	4	2	1	....	....	1	1	....	....	26	18
320–324	Inflammatory diseases of the central nervous system	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....
340–349	Other Diseases of the Central nervous system	....	....	....	....	....	....	....	....	....	....	1	1	5	....	1	1	4	....	3	....	1	....	2	....	....	....	....	....	17	2
350–358	Diseases of nerves and peripheral ganglia	....	....	....	....	....	....	....	....	....	....	....	....	....	3	1	....	....	2	1	2	....	....	....	....	....	....	....	....	2	7
400–404	Hypertensive Disease	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1
410–414	Ischaemic Heart Disease	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	2	....	....	....	....	....	2	....	1	....	....	....	6	1
420–429	Other forms of heart disease	....	....	1	....	....	....	....	....	....	....	....	....	1	1	....	....	4	....	....	....	4	....	1	....	2	2	....	....	13	3
430–438	Cerebrovascular Disease	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	2	....	2	....	....	....	3	2	....	....	9	2
440–448	Diseases of Arteries, Arterioles and capilleries	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	2	
450–458	Diseases of veins and Lymphatics and other diseases of circulatory system	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	1	....	1	....	1	....	....	....	5	
460–466	Acute respiratory infection (except influenza)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	1	....	....	....	....	2	1
480–486	Pneumonia	....	....	....	....	....	....	....	....	....	1	1	....	2	1	3	....	3	2	6	1	3	1	....	....	2	....	....	....	20	6
490–493	Bronchitis, Emphysema and Asthma	....	....	....	....	....	....	....	....	....	....	....	....	1	....	6	....	1	....	3	....	1	1	1	....	....	1	....	....	13	2
510–519	Other diseases of respiratory system	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	2	....	....	....	....	....	4	
520–529	Diseases of oral cavity, salivary glands and jaws	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	2	....
530–537	Diseases of oesophagus, stomach and duodenum	....	....	....	....	....	....	1	....	....	....	....	....	4	....	1	....	3	....	2	....	1	....	....	....	....	....	....	....	12	
560–569	Other diseases of intestine and peritonium	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	
570–577	Diseases of liver, gall bladder and pancreas	....	....	....	....	....	....	1	....	3	....	3	2	7	1	3	2	2	2	5	4	4	2	1	....	1	....	....	....	30	13
580–584	Nephritis and Nephrosis	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	2	
590–599	Other Diseases of urinary system	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	....	....	....	....	....	....	....	....	3
600–607	Diseases of male genital organs	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	
630–634	Complications of pregnancy	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
680–686	Infections of skin and subcutaneous tissue	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	....	....	....	....	....	....	....	2	1

DISCHARGES FROM TEACHING HOSPITALS BY PRINCIPAL CONDITION TREATED, WHERE SECONDARY OR CONTRIBUTING CONDITION IS ALCOHOLISM

1971 (INCLUDES ACCIDENTAL INJURY)—*continued*

I.C.D. Codes	Principal Condition	AGE GROUPS																													
		10–14		15–19		20–24		25–29		30–34		35–39		40–44		45–49		50–54		55–59		60–64		65–69		70+		Not		All Stated	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
690–698	Other inflammatory conditions of skin and subcutaneous tissue	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	1	1	3	....	1	....	1	....	....	....	....	....	8	1
700–709	Other diseases of skin and subcutaneous tissue	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	1	....	1	....	....	....	1	....	....	....	5	1
710–718	Arthritis and Rheumatism except Rheumatic fever	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	2	....
720–729	Osteomyelitis and other diseases of bone and joint	....	....	....	....	....	....	....	....	1	....	1	....	....	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	3	2
780–789	Symptoms referable to symptoms or organs	....	....	....	....	....	....	1	....	3	....	3	1	4	....	5	....	5	....	....	1	....	1	1	....	2	....	....	....	24	3
790–796	Illdefined diseases	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	.
800–809	Fracture of skull, spine and trunk	....	....	2	....	....	....	2	....	2	....	1	....	....	....	1	....	4	....	1	....	3	....	....	....	....	1	....	....	16	1
810–819	Fracture of upper limb	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	. .	1	1	1	1	1	....	....	....	2	1	....	....	5	3
820–829	Fracture of lower limb	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	1	1	1	3	....	2	....	2	....	....	1	....	....	12	3
840–848	Sprains and strains of joints and adjacent muscles	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	2
850–854	Intracranial injury (excluding those with skull fractures)	....	....	10	1	12	....	8	....	5	....	7	1	2	1	2	2	2	....	6	....	2	2	2	1	....	....	2	....	60	8
860–869	Internal injury of chest, abdomen and pelvis	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	...
870–879	Laceration and open wound of head, neck and trunk	....	....	1	....	1	....	1	....	1	....	1	....	1	1	....	....	1	....	2	....	1	....	....	....	....	....	....	....	10	1
880–887	Laceration and open wound of upper limb	....	....	....	....	1	....	....	....	....	....	2	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	1
900–907	Laceration and open wound of lower limb	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
910–918	Superficial injury	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
920–929	Contusion and crushing with intact skin surface	...	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
940–949	Burn	....	....	....	. . .	....	....	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	1	....	....	....	....	....	4	....
960–979	Adverse effect of medicinal agents	....	....	1	1	3	....	1	....	3	....	7	1	2	4	4	2	....	2	2	....	1	....	3	1	2	....	1	....	30	11
980–989	Toxic effect of substances chiefly non-medicinal as to source	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	3	....
990–999	Other adverse effects	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Y10–Y19	Other examinations without reported diagnosis	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.
Y30–Y39	Medical and surgical aftercare without current complaint or sickness	....	....	....	....	....	....	....	....	....	....	....	....	3	....	1	....	2	....	1	....	....	....	....	....	....	....	....	..	7	....
Y40–Y49	Persons undergoing preventive measures	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	1
	Total	....	1	17	2	20	5	23	1	24	3	36	9	45	16	45	15	51	15	52	23	38	9	27	9	23	10	3	....	404	118

Appendix XVIII

Derby Leprosarium, Western Australia

Admissions and Discharges for the Year 1971, compiled from the Monthly Returns of the Superintendent

Month	Admissions							Discharges									Inmates Remaining in Leprosarium		
	Male			Female			Total Male and Female	Male				Female				Total Male and Female			
	Ad-mitted	Re-Ad-mitted	Total	Ad-mitted	Re-Ad-mitted	Total		Dis-charged	De-ceased	Ab-sconded	Total	Dis-charged	De-ceased	Ab-sconded	Total		Male	Female	Total Male and Female
January	2	1	3	....	2	2	5	3	....	....	3	2	1	....	3	6	83	55	138
February	....	2	2	1	1	2	4	4	....	....	4	1	....	....	1	5	81	56	137
March	....	2	2	....	1	1	3	3	....	....	3	1	1	....	2	5	80	55	135
April	1	2	3	1	....	1	4	4	1	....	5	2	....	....	2	7	78	54	132
May	....	....	....	....	....	....	....	3	....	....	3	2	....	....	2	5	75	52	127
June	....	4	4	1	....	1	5	4	....	....	4	4	1	....	5	9	75	48	123
July	....	....	....	....	....	....	....	2	....	....	2	....	....	....	....	2	73	48	121
August	....	2	2	....	....	....	2	2	....	....	2	2	....	....	2	4	73	46	119
September	3	2	5	1	....	1	6	3	....	....	3	1	....	...	1	4	75	46	121
October	1	1	2	....	....	....	2	1	....	....	1	....	....	....	....	1	76	46	122
November	1	1	2	....	1	1	3	1	....	....	1	2	....	....	2	3	77	45	122
December	1	3	4	....	4	4	8	1	....	....	1	....	....	....	...	1	80	49	129
Total	9	20	29	4	9	13	42	31	1	....	32	17	3	....	20	52	....	....	....

Appendix XIX

Incidence and Mortality of Notifiable Diseases

Diseases Notifiable	1968		1969		1970		1971	
	Cases Notified	Deaths	Cases Notified	Deaths	Cases Notified	Deaths	Cases Notified	(c) Deaths
Amoebiasis	....	....	1	....	....	....	2	....
Ancylostomiasis	24	1	22	1	3	....	C.O.S. 1	....
Anthrax	....	....	....	....	....	....	....	....
Bacillary Dysentery	145	5	116	2	256	4	149	2
Bilharziasis	....	1	....	....	....	....	1	....
Brucellosis	1	....	2	....	2	....	1	....
Cholera	....	....	....	....	....	....	....	....
Diphtheria	1	....	....	....	2	....	1	....
Encephalitis Lethargic (b)	....	6	....	1	....	....	....	....
Filariasis	....	1	C.O.S. 1	....	1	....	C.O.S. 1	....
Homologous Serum Jaundice	....	N.A.	....	N.A.	....	N.A.	....	N.A.
Hydatid	3	....	1	1	....	....	2	....
Infective Hepatitis	147	1	146	4	166	4	291	2
Leprosy	26	1	39	1	28	1	25	2
Leptospirosis	1	....	....	....	....	....	....	....
Malaria	6	....	3	....	10	....	C.O.S. 19	....
Meningococcal Infection	2	3	6	3	5	4	5	1
Ornithosis	....	....	1	....	....	....	....	....
Paratyphoid	1	....	....	....	....	....	1	....
Plague	....	....	....	....	....	....	....	....
Poliomyelitis	2	1	....	....	....	....	....	1
Puerperal Fever	2	....	1	....	2	....	2	1
Relapsing Fever	....	....	....	....	....	....	....	....
Salmonella Infection (a)	95	2	173	....	152	2	224	4
Scarlet Fever	21	1	23	....	27	....	18	....
Small pox	....	....	....	....	....	....	....	....
Tetanus	2	1	1	....	....	....	4	1
Tuberculosis	178	14	187	10	178	12	114 + C.O.S.	22
Typhoid Fever	2	....	3	....	1	....	1	....
Typhus Fever	....	....	....	....	....	....	....	....
Yellow Fever	....	....	....	....	....	....	....	....

N.A. = Not available. C.O.S. = Contracted out of State.
(a) Other salmonella infection. (b) Viral encephalitis, unspecified. (c) Preliminary.

Appendix XX

Stillbirth and Infant Mortality Rates W.A. (a)

Year	Total Births Including Stillbirths	Stillbirth Rates	Under One Week	Mortality Rates Under One Month	Over One Month and Under One Year	Total Mortality Rates Under One Year	Total Mortality Rates Under One Year Including Stillbirths
1946	12,398	23·1	17·1	20·6	9·6	30·3	53·4
1947	13,178	23·2	16·9	19·4	13·2	30·2	53·4
1948	13,197	20·5	16·9	18·7	8·4	25·0	45·5
1949	13,779	19·4	16·2	19·0	6·8	25·9	45·3
1950	14,468	16·6	16·2	18·0	8·6	26·7	43·3
1951	15,091	19·7	16·2	19·7	8·5	28·2	47·9
1952	15,697	18·1	15·5	17·7	6·9	24·5	42·6
1953	16,130	16·6	13·4	16·2	7·3	23·4	40·0
1954	16,198	16·7	14·2	15·8	6·4	22·2	38·9
1955	16,862	14·2	13·3	15·8	6·3	22·1	36·3
1956	17,142	13·2	13·0	15·7	6·7	22·4	35·6
1957	17,172	14·4	13·6	14·9	5·9	20·8	35·2
1958	16,956	13·3	12·8	14·2	7·1	21·2	34·5
1959	17,336	13·0	12·3	13·6	6·3	19·9	32·9
1960	17,152	13·2	13·9	15·7	5·7	21·3	34·5
1961	17,318	13·9	10·3	12·6	6·8	19·4	33·3
1962	17,267	11·8	12·6	14·3	7·7	22·0	33·8
1963	17,468	10·2	12·3	14·7	5·5	20·2	30·4
1964	16,855	10·1	11·8	12·9	6·6	19·5	29·5
1965	16,367	11·1	12·8	15·0	6·5	21·4	32·5
1966	17,368	10·0	12·4	14·4	5·4	19·7	29·8
1967	18,211	10·3	11·4	13·0	4·3	17·2	27·6
1968	19,784	12·3	13·3	14·7	5·5	20·1	32·3
1969	21,004	11·9	13·9	15·3	6·2	21·6	33·5
1970	21,913	13·5	12·4	14·4	6·6	20·9	34·4
1971	24,537	12·1	11·0	12·4	6·5	18·9	31·1

(a) For 1965 and earlier years, exclude Full-blood Aborigines. From 1966, Aborigines are included. In above table, all rates are calculated in deaths per 1,000 total births, including stillbirths.

For 1968 and later years, the term " stillbirth " refers to a child of at least 20 weeks gestation, not born alive.

STILLBIRTH AND INFANT MORTALITY RATES (a) (b)

Area of Registration	Total Births Including Stillbirths (c)	Stillbirth Rates (c)	Infant Mortality Rates				Total Mortality Infant Deaths and Stillbirths
			Under One Week	Under One Month	Over One Month and Under One Year	Total Under One Year	
1970—							
New Zealand	62,878	10·67	8·81	10·2	6·3	16·5	27·2
1971—							
Western Australia	24,537	12·1	11·0	12·4	6·5	18·9	31·1
New South Wales	99,648	11·9	11·5	12·6	4·5	17·2	29·0
Victoria	(d) 75,498	(e)	(f) 9·3	(f) 10·4	(f) 4·3	(f) 14·7	(e)
Queensland	40,382	10·2	12·3	13·7	5·3	19·0	29·2
Tasmania	(d) 8,321	(e)	(f) 6·4	(f) 7·5	(f) 6·2	(f) 13·7	(e)
South Australia	23,246	10·8	10·5	11·6	4·2	15·7	26·5

(a) Rates calculated per 1,000 total births including stillbirths.
(b) Infant mortality defined as deaths occurring from birth to one year of age.
(c) The term " stillbirth " refers to a child, not born alive, of at least 20 weeks gestation (for W.A., N.S.W. and S.A.) or 28 weeks gestation (for New Zealand, Victoria, Queensland and Tasmania).
(d) Live births only.
(e) Not available.
(f) Based on live births only.

INFANT MORTALITY (*a*)

Year	Births	Infant Mortality Per 1,000 Live Births
1946	12,105	31·1
1947	12,874	30·9
1948	12,931	25·6
1949	13,511	26·4
1950	14,228	27·1
1951	14,794	28·7
1952	15,413	24·9
1953	15,862	23·8
1954	15,928	22·5
1955	16,623	22·4
1956	16,916	22·7
1957	16,924	21·1
1958	16,731	21·5
1959	17,111	20·2
1960	16,926	21·6
1961	17,078	19·7
1962	17,064	22·3
1963	17,290	20·4
1964	16,685	19·7
1965	16,186	21·7
1966	17,194	19·9
1967	18,023	17·4
1968	19,541	20·4
1969	20,754	21·8
1970	21,618	21·2
1971	24,239	19·1

(*a*) For 1965 and earlier years, excludes full-blood Aborigines. From 1966 Aborigines are included.

Infant mortality defined as deaths occurring from birth to one year of age.

COMPARISON OF INFANT MORTALITY AND GENERAL DEATH RATE

Place	Infant Mortality Rate (*a*)					General Death Rate (*c*)				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
New Zealand (*b*)	18·0	18·7	16·9	16·7	16·5	8·43	8·88	8·68	8·79	8·62
Western Australia (*c*)	17·4	20·4	21·8	21·2	19·1	7·71	8·17	7·71	7·61	7·59
New South Wales (*c*)	18·4	18·7	18·9	19·7	17·4	9·22	9·59	9·16	9·64	9·06
Victoria (*c*)	16·8	14·4	15·0	14·5	14·7	8·66	9·01	8·56	8·80	8·73
Queensland (*c*)	19·5	20·3	18·9	17·9	19·2	8·67	9·30	8·96	9·52	8·94
South Australia (*c*)	17·0	16·3	15·8	16·2	15·9	8·17	8·83	8·19	8·76	8·24
Tasmania (*c*)	17·2	17·2	16·5	14·2	13·7	8·60	8·65	8·60	8·19	8·43

(*a*) Infant deaths per thousand live births. (Deaths under one year of age.)
(*b*) Includes Maoris.
(*c*) Australian general death rates have been revised in accordance with the preliminary results of the 1971 Census.

Appendix XXI

Western Australia Stillbirth and Birth Rates[a]

Year	Mean Population Year Ended 31st December	Live Births		Stillbirths (*b*)	
		Number	Rate per 1,000 Mean Population	Number	Rate per 1,000 Total Births
1950	557,878	14,228	25·50	240	16·59
1951	580,317	14,794	25·49	297	19·68
1952	600,615	15,413	25·66	284	18·09
1953	621,034	15,862	25·54	268	16·62
1954	639,963	15,928	24·89	270	16·67
1955	657,323	16,623	25·29	239	14·17
1956	674,459	16,916	25·08	226	13·18
1957	687,448	16,924	24·62	248	14·44
1958	699,915	16,731	23·90	225	13·27
1959	711,737	17,111	24·04	225	12·98
1960	722,900	16,926	23·41	226	13·18
1961	737,596	17,078	23·15	240	13·86
1962	766,205	17,064	22·58	203	11·76
1963	788,457	17,290	22·23	178	10·19
1964	808,300	16,685	20·93	170	10·09
1965	826,481	16,186	19·85	181	11·06
1966	849,112	17,194	20·25	174	10·02
1967	879,193	18,023	20·50	188	10·32
1968	914,515	19,541	21·37	243	12·28
1969	953,796	20,754	21·76	250	11·90
1970	991,720	21,618	21·80	295	13·46
1971	1,028,586	24,239	23·57	298	12·15

(*a*) Mean population : Figures prior to 1962 exclude full-blood Aborigines.
Births : For 1965 and earlier years figures exclude full-blood Aborigines ; from 1966 Aborigines are included.
A line drawn across the columns indicates a break in the series.
Birth rates from 1966 have been revised in accordance with the preliminary results of the 1971 Census.

(*b*) From 1st January, 1968, the term " stillbirth " for registration purposes, refers to a child of at least 20 weeks gestation, not born alive. Previously it was restricted to cases where the gestation period was at least 28 weeks.

Appendix XXII

MATERNAL MORTALITY

Period	Average Annual Live Births	Average Annual Maternal Deaths	Average Annual Rate
1901–1905	6,681	28·0	4·19
1906–1910	7,691	43·4	5·64
1911–1915	8,844	39·4	4·46
1916–1920	7,726	41·4	5·36
1921–1925	8,056	34·2	4·25
1926–1930	8,748	46·8	5·35
1931–1935	8,062	35·4	4·39
1936–1940	8,877	32·4	3·65
1941–1945	10,408	24·4	2·34
1946–1950	13,130	21·4	1·63
1951–1955	15,724	13·8	0·88
1956–1960	16,922	8·2	0·48
1961–1965	16,861	5·0	0·30
1966–1970	19,426	4·0	0·21

Year	Live Births	Deaths from									
		Puerperal Septicaemia		Other Puerperal Infection		Abortion		All Other Complications of Pregnancy and of the Puerperal State		All Complications of Pregnancy and the Puerperal State	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1946	12,105	....	....	3	0·25	5	0·41	18	1·49	26	2·15
1947	12,874	1	0·08	1	0·08	8	0·62	22	1·71	32	2·49
1948	12,981	2	0·15	4	0·31	1	0·08	13	1·00	20	1·55
1949	13,511	....	....	2	0·15	3	0·22	11	0·81	16	1·18
1950	14,288	....	....	2	0·14	1	0·07	10	0·70	13	0·91
1951	14,794	....	....	2	0·14	3	0·20	11	0·74	16	1·08
1952	15,413	....	....	3	0·19	3	0·19	12	0·78	18	1·17
1953	15,862	....	....	....	....	1	0·06	8	0·50	9	0·57
1954	15,928	....	....	....	....	5	0·31	7	0·44	12	0·75
1955	16,623	....	....	....	....	1	0·06	13	0·78	14	0·84
1956	16,916	....	....	....	....	2	0·12	7	0·41	9	0·53
1957	16,924	....	....	....	....	3	0·18	8	0·47	11	0·65
1958	16,731	....	....	....	....	1	0·06	7	0·42	8	0·48
1959	17,111	....	....	....	....	1	0·06	4	0·23	5	0·29
1960	16,926	1	0·06	....	....	3	0·18	4	0·24	8	0·47
1961	17,078	....	....	....	....	2	0·12	5	0·29	7	0·41
1962	17,064	....	....	....	....	1	0·06	4	0·23	5	0·29
1963	17,290	....	....	....	....	1	0·06	3	0·17	4	0·23
1964	16,685	....	....	....	....	3	0·18	3	0·18	6	0·36
1965	16,186	....	....	....	....	1	0·06	2	0·12	3	0·19
1966	17,194	....	....	....	....	1	0·06	6	0·35	7	0·41
1967	18,023	....	....	....	....	....	....	2	0·11	2	0·11
1968	19,541	....	....	....	....	....	....	5	0·26	5	0·26
1969	20,754	....	....	....	....	....	....	3	0·14	3	0·14
1970	21,618	....	....	....	....	....	....	3	0·14	3	0·14
1971 (*a*)	24,239	1	0·04	....	....	....	....	2	0·08	3	0·12

(All rates per thousand live births.)
(*a*) Deaths for 1971 are preliminary.

MATERNAL MORTALITY RATES PER THOUSAND LIVE BIRTHS

Place	1963	1964	1965	1966	1967	1968	1969	1970	1971
Western Australia (*a*)	0·23	0·36	0·19	0·41	0·11	0·26	0·14	0·14	0·12
New Zealand (*b*)	0·37	0·26	0·17	0·32	0·17	0·24	0·20	0·22	N.A.
New South Wales (*a*)	0·32	0·34	0·32	0·28	0·24	0·34	0·17	0·25	0·15
Victoria (*a*)	0·21	0·31	0·36	0·25	0·20	0·20	0·14	0·25	0·23
Queensland (*a*)	0·25	0·29	0·30	0·40	0·26	0·31	0·22	0·21	0·25
Tasmania (*a*)	0·23	0·24	0·40	0·27	0·27	0·48	0·12	0·37	Nil
South Australia (*a*)	0·28	0·33	0·34	0·20	0·20	0·14	0·32	0·31	0·22

(*a*) For 1965 and earlier years excludes Full-blood Aborigines. In 1966, and subsequent years, Aborigines are included.
(*b*) Non-Maori.

Appendix XXIII

Revenue and Expenditure for the Calendar Year 1971

1971

Revenue

		$
Laboratory Fees*		830,661
Branding Fees—	$	
Fish	5,096	
Meat	140,095	
		145,191
Septic Tank Fees		51,404
Dental Fees—Clinics		168,680
Child Health Contributions		45
North West Health Inspection Fees		6,761
Public Buildings—Inspection Fees		4,376
Private Hospitals—Licence Fees		3,084
Poisons Act—Licence Fees		4,546
Clean Air Act—Licence Fees		10,860
Pest Control Collections		1,760
Pesticide Registration Fees		900
Perth Medical Officers Fees		2,181
Miscellaneous		23,855
Tuberculosis Control :		
Commonwealth Capital Recoups		11,766
Commonwealth Maintenance Recoups		580,666
Other		19,907
Administration Charges		77,050
		$1,943,693

*Includes $234,489 from Branch Laboratories for the period 1/1/71 to 30/6/71 after which Revenue is credited to Medical Vote.

1971

Expenditure

	$
Administration—	
Salaries (including School Medical Service $155,308)	996,892
Generally	139,653
Physiotherapy and Speech Therapy Bursaries	18,620
Clean Air Act and Poison Committee Fees Clean Air Act Equipment and Incidentals	22,106
Health Inspection	40,422
Library and Information Service	19,577
Medical Photographic Unit	13,818
Occupational Health	5,543
Nursing Services	91,846
Pest Control	9,225
Pharmaceutical Services	6,649
Radioactive Substances	576
Statistics and Automatic Data Processing	15,853
Septic Tank Inspection Fee Refund	20,467
Printing	34,295
Sub Total	1,435,542
Child Health Services—	
Salaries	384,735
Generally	96,153
Sub Total	480,888
Dental Health Services—	
Salaries	283,341
Generally	*192,137
North West Clinics	101,925
Dental Bursaries	55,751
Sub Total	633,154
Epidemiology—	
Salaries	121,133
Generally	63,834
Venereal Diseases	27,864
Sub Total	212,831
Laboratories—	
Salaries	†1,301,255
Generally	†655,590
Cadetship—Laboratory Technicians	44,241
Sub Total	2,001,086
Tuberculosis Control—	
Salaries	302,431
Generally (including Chest Clinics)	316,382
Recoup to Sir Charles Gairdner Hospital	400,066
Sub Total	1,018,819
Grand Total—Salaries and Other	$5,782,320

*Includes $78,643 for the Dental Therapy School for the period 1/1/71 to 30/6/71 after which expenditure is borne by W.A.I.T.

†Includes $207,942 being expenditure on Branch Laboratories from 1/1/71 to 30/6/71, after which expenditure is borne by Medical Department.

N.B.—The base year cost of Tuberculosis Control ($155,700) which is the State's Contribution and payable from the Health Vote, has not been shown under the C.R.F. Expenditure Items, nor has it been included in the Revenue Statement under the Tuberculosis Item.

WILLIAM C. BROWN, Government Printer, Western Australia